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ABSTRACT

This document reports on a study of employer-linked charter schools that included case studies of 9 of the more than 70 employer-linked charter schools currently in operation across the United States. Section 1 is an overview of employer-linked charter schools' key elements and unique features. Topics examined include the following: vision of charter school founders, learning in context, meeting workforce development needs, charters' relationship to traditional school systems, curriculum innovation, raising standards, assessment of student achievement, flexibility of staffing, and role models and mentoring. Section 2 is a discussion of the study methodology that includes the following: case study selection criteria; characteristics of the case study sites; the research questions; and site summaries. The case study sites, which had enrollments ranging from 60 to 2,480, included a program that helped students identify areas of vocational interest and explore related career options and programs targeted toward specific groups (for example, out-of-school urban youths) or students with specific career interests (for example, students interested in careers in manufacturing, the performing arts, and health careers). Appendixes, constituting approximately two-thirds of the document, contain the case studies, which describe the following elements for each school: defining purpose, learning standard, curriculum, worksite learning, governance, and career purpose. (MN)

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Learning From Experience:
Case Studies of Employer-Linked Charter Schools

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Preface

This report documents an important step in a larger project to support the successful development of employer-linked charter schools.[1] An employer-linked charter school is a special type of public charter school in which an employer organization or network joins with educational entrepreneurs in a collaborative partnership to develop and operate a workworld-informed educational program. Because charter schools are exempt from many regulations governing traditional public schools, they have more freedom to develop innovative educational programs. In exchange for this flexibility, charter schools are held accountable for student performance. Schools studied here provide illustrations of how employer and education innovators are using that freedom in powerful ways around the country.

The project, which is funded by the U.S. Department of Education, is a collaborative venture of Public Policy Associates (PPA), the National Alliance of Business (NAB), and Michigan Future, Inc., (MFI). PPA currently provides technical assistance, development, and evaluation services to education reformers, workforce development policy makers, and school-to-work program developers in communities around the country. The NAB is a highly regarded, business-led, nonprofit corporation dedicated to building a quality workforce that meets the needs of employers. MFI is a nonprofit citizens' organization focused on preparing youth and adults for the new economy. MFI has led a coalition that has launched four charter school trade academies in Michigan. The project, and the project team, are positioned to provide technical assistance to charter school entrepreneurs and members of the business community who recognize the unique educational opportunities that can be made available to all students through development of employer-linked[2] charter schools.

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[1] *Building Connections and Competencies: Ensuring Youth Success through Business-Linked Charter Schools*. U.S. Department of Education, Contract Number SB 97023001.

[2] An "employer-linked charter school" is defined as those that are developed in partnership with employers who are directly involved in the school's design, governance and delivery of learning to students.

The project team has developed the information and tools to illustrate and support "best practices" in employer-linked charter schools. Starting this year, the team will field-test outreach efforts, improve materials and processes, and build the capacity of organizations developing, or interested in developing, employer-linked charter schools.

The initial project work, now complete and available, includes the following:

1. the development of a knowledge base about existing employer-linked charter schools[3]
2. a review of the existing literature on how charter schools can implement effective school-to-work programming and, in particular, serve disadvantaged youth[4]
3. case studies of selected employer-linked charter school programs
4. the development of an array of resource materials designed to assist business groups, intermediary community organizations, and education entrepreneurs interested in developing their own employer-linked charter schools.[5]

This report summarizes a major task of the initial project work—case studies of selected employer-linked charter school programs.

Case studies allowed the project team to move well beyond its initial inventory of employer-linked charter schools around the country, which relied primarily on secondary sources of information. Site visits conducted by team members provided an opportunity to better understand the mission and unique driving forces behind the initiation and development of

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[3]PPA, NAB, MFI, *An Inventory of Business-Linked Charter Schools*, Research report submitted to the U.S. Department of Education, April 1998.

[4]PPA, NAB, MFI, *Redefining Public Education: The Promise of Charter Schools and School-to-Work*, June 1998.

[5]Most of these materials are now available at the project website: http://www.nab.com/schooltowork/charterschools/

these schools. They also revealed a host of practical charter school-development issues as experienced by school organizers and operators. Through intensive case study, the project team was able to accomplished the following:

- capture compelling descriptions, images, and success stories for businesses and other community stakeholders potentially interested in developing new employer-linked charter schools
- identify and gain insight into the problems encountered and the key obstacles to surmount in employer-linked charter school development
- identify a network of practitioners with experience in designing and operating employer-linked charter schools who can be called upon for advice and support

The project team began its work with knowledge of several cases where employers or employer groups had helped create and operate charter schools in order to put in place a more direct and effective educational program that linked students to careers in their respective industries. The team hypothesized that there would be many examples of schools under development, as new state laws provided the opportunity, that essentially used charter schools as a vehicle for strong career preparation programs.

However, what the project team discovered was much more complex. Yes, many charter schools (over 70 of the nearly 1,000 currently open nationwide) have developed their learning program with a strong and specific use of employer partners. But the way these schools focus the engagement with employers and other community institutions ranges widely—from very focused career preparation, to those that incorporate modest exposure to jobs, careers and employers. Some schools target industry-specific competencies and careers. Others focus on equally powerful and dynamic uses of employer worksites—providing life and work roles and tasks to enrich academic learning, build life skills, and provide rich and nurturing environments for mainstream and troubled youth alike.

The case studies reported here illustrate the powerful learning regimes developed through employer-linked charter schools. Those regimes include the freedom to innovate, the motivating dynamics of real-world exposure, and the satisfaction of close employer-educator-student ties. The personal accounts of the participants, as well as the organizational lessons learned through reflection on the case study experience as a whole, are the subject of this report.

Organization of Report

This report is presented in two sections and an Appendix as follows:

- *Section One* summarizes the findings using illustrations from the individual case studies.
- *Section Two* places the case studies within the context of the study as a whole, describing the purpose of the case studies, how specific sites were selected and how they link with other facets of the project. A brief overview of each site, distilled from the inventory summary report, is included.
- The *Appendix* contains the full individual case study reports organized alphabetically by state.

Section One:

How Innovative Employers and Educational Entrepreneurs are Working Together to Build Public Schools for the 21st Century

Introduction

In the Spring of 1998, the project team conducted site visits at just nine of the more than 70 employer-linked charter schools that are currently in operation across the country. The charter schools featured in this report were selected because they illustrate some of the most powerful employer partnerships and innovative career-oriented curricula in public education today. They may not necessarily be representative of all employer-linked charter schools listed in the national inventory. However they do provide an exciting glimpse of what is possible within a charter school context. This section summarizes the lessons learned through reflection on these schools individual and collective experience.

For many educators, employers, parents, and students, employer-linked charter schools offer an opportunity to build a better future. Educators are excited by the idea of working in a school which allows them greater freedom to design and use innovative teaching strategies. Through involvement in design and management of a charter school, employers are given the chance to do more than simply complain about the quality of the entry-level workforce and the slow pace of education reform. Parents can find exciting alternatives to the public school located in their attendance zone. And students no longer need to feel that the traditional public school environment or curriculum does not fit their educational needs or career goals.

Across the country, education entrepreneurs and innovative employers are joining forces. They are taking the time to listen and learn from each other and are working together to develop educational programs that will help ensure the future success of our most precious resource—our children.

This report focuses on just a few of the more than 70 employer-linked charter schools currently in operation across the country. The schools profiled in this case study report are led by some

of the brightest and most dynamic educators and business leaders in America. These specific schools were selected because they illustrate some of the most powerful partnerships and promising learning approaches that were found in the course of developing a national inventory of employer-linked charter schools.[6] They are a testament to the tremendous dedication of their founders—and the tenacity of their staff and stakeholders.

Despite the many challenges involved in moving from a vision of schooling to actual operating reality, the leaders of these schools are succeeding in making a new form of education available to a diverse population of students in urban, suburban and rural communities across the nation. These schools faced many challenges, and major "bumps in the road" continue to confront them. The ultimate test of these programs—better academic, work, and life outcomes for students—largely lies ahead. This case study report attempts to illustrate the power and innovation at work, while acknowledging and identifying the various problems employer-linked charter schools face. This summary report describes major themes and relies heavily on examples from the individual case study summaries that are included in the appendix to illustrate those themes. There is much here to inspire and inform other pathfinders in this largely uncharted territory.

Key Elements

Creating an effective employer-linked charter school is an ambitious undertaking. Moving from concept to reality requires both dedication and skill. This section describes the major features these path-breaking charter schools held in common. It also discusses the key

[6]PPA, NAB, MFI, *An Inventory of Business-Linked Charter Schools*, Research report submitted to the U.S. Department of Education, April 1998. The case studies presented in this report were selected because they illustrate some of the most promising practices identified through the inventory process. They are *not* intended as a representative sample of all charter schools or even all employer-linked charter schools currently in operation.

elements of the genesis, mission, curriculum, structure, and operations of the nine charter schools included in this study.

The Founders' Vision

It takes special people to start an employer-linked charter school—people who are motivated by a vision of what "being educated" can mean to a young person's life. These people realize how education unlocks the door to a broader understanding of the community in general and enhances the likelihood that students will find meaningful work in the future. It takes the insight and the entrepreneurial spirit to act on the opportunity of the charter school as a blank slate from which a new learning institution can emerge. A charter school can serve as a vehicle for channeling passion, creativity, and innovation into effective learning.

The project team found that a powerful, shared vision—developed by the initial partners in the school's conception, orientation, and design—defined the case study schools and drove the process forward. The following examples illustrate this fact:

- Tess Tiernan was a teacher in the Minneapolis public schools and was dedicated to helping at-risk youth "find their passion" in terms of a career interest. Unable to find acceptance for her approach within the school district, she searched for support from the community at-large, finding willing partners in the Minnesota Teamsters Service Bureau, the Minnesota Business Partnership, and the University of Minnesota College of Education. These partners shared her commitment to an outcome-based, experiential, school-to-work learning model. This shared vision led to the creation of the *Skills for Tomorrow High School*—a charter high school in downtown Minneapolis which provides a racially and culturally diverse population of students the opportunity to explore a variety of career directions while learning about the needs and expectations of employers.

- Cal Stone, an administrator of a drop-out retrieval program, had made a life-long commitment to providing these at-risk young people with the opportunity to not only earn a

high school diploma but to regain a sense of self-worth and career direction that had faded without the social and emotional bonds of a supportive family. Members of the small business community responded to Stone's plea for support. Their shared commitment to doing "good work" in the community led to the development of the *Affiliated Alternatives Work & Learn Center* in Madison, Wisconsin—a charter high school that offers young men and women a second chance to build a productive future.

- Karen Butterfield, the 1992 Arizona Teacher of the Year, saw the potential for a school that would actively engage students in the learning process by combining visual and performing arts with an academically rigorous college-preparatory curriculum. After approaching and being rebuffed by the local school district in her hopes to start a charter school, she found the ideal partner in Michael Fox. Fox, the Executive Director of the Museum of Northern Arizona, had his own vision of a museum with a broad community mission. Together, their vision led to the creation of the *Flagstaff Arts and Leadership Academy*—a charter high school located on the grounds of the museum.

- Executives from DuPont, Bell Atlantic, Delvarma Power, Hercules Incorporated, the Medical Center of Delaware, and Zeneca, Inc. believed that one of the most important gifts we can give our children is an education that prepares them for today's world as well as tomorrow's. They recognized that businesses will need highly skilled, yet flexible, employees to help ensure success in an increasingly competitive market. Frustrated with the slow pace of change and reform of the existing public schools in the community, these business leaders joined with parents, teachers, and other community representatives to create the *Charter School of Wilmington* in Wilmington, Delaware.

- Steve Hamp, President of Henry Ford Museum and Greenfield Village; Renee Lerche, Human Resources Director for the Ford Corporation; and Mike Flanagan, the Wayne County School Superintendent, shared an interest in "reinventing" public schooling. These leaders saw how a global manufacturing firm, with all its processes and people, could team

with the country's largest history museum to become a national model and force in education reform. Their shared vision led to the creation of the *Henry Ford Academy*—a charter school that demonstrates how a cultural institution such as a museum can bring alive the lessons of history while preparing students for success in the 21st century workforce.

These and other educators and business leaders are working together right now to create and support employer-linked charter schools. They believe that public schools can and, indeed, must play a pivotal role in preparing students to be successful as adults. For them, charter schools are a means towards that end. The schools they have created are a reflection of their belief that, in education, "one size does not fit all."[7]

Learning in Context - Learning in the World

One of the most dramatic and compelling themes that cut across the case studies was the way in which employer-linked charter schools used the relationship with their partners as a window into the world and the workplace—creating a richly layered context for learning. Schools set in workplaces, museums, or where learning happened largely through community-based projects, created powerful interactions with both the content and the people in the community. The constant interaction with adult role models and mentors, in various capacities, created new and powerful relationships for students. The profiled schools were characterized by opportunities to learn, first-hand, workplace norms and behavioral norms in adult roles. The students were directly exposed to today's workworld skill requirements (like problem-solving and teamwork), as well as the demands of diversity.

In addition, these schools deliberately crafted the curriculum, the style of teaching, and the place and time of learning to combine academic skills *with* life skills. In some cases, workplace culture knowledge and competencies were combined with deliberate career

[7]Tess Tiernan, Director, Skills for Tomorrow High School, Minneapolis, MN.

preparation. At employer-linked charter schools, classroom lessons take on new meaning. Students are more engaged in their studies, and expectations for appropriate behavior make more sense, because they are viewed in the context of the workplace and society at large. The following examples illustrate this enhanced student engagement.

- Lisa was a pregnant teenager without a supportive family, without a high school diploma, and without any marketable job skills. Out of desperation, she turned to *Affiliated Alternatives Work & Learn Center*. In her first-semester work placement at a local day care center, she reflected on her own life experience as she learned how to care for and nurture pre-school children. In her second semester, she helped build a house—learning the value of teamwork and discovering the relevance of mathematics in a real-world application. In Lisa's third semester, she learned how to give of herself, assisting and developing meaningful relationships with adult participants in a day center for the elderly. In her fourth semester, she found fulfillment working as an aide in an Alzheimer's facility. When Lisa entered the program, her future was bleak. Now, she has occupational certifications, a job she enjoys, career-ladder plans, and great pride in her ability to provide a stable life for herself and her infant child. With the support and encouragement of the Work & Learn Center staff, Lisa was transformed from an alienated teenager to a skilled employee and an effective parent prepared to deal successfully with life's challenges.

- Students at *Skills for Tomorrow High School* rarely ask why a behavior requirement, dress code, or performance standard is applied at the school since they know that it all derives directly from the workplace. They also know that in the racially and culturally integrated environment of the school, being an effective part of a team means dealing with prejudices and stereotypes. The school takes on such issues explicitly, encouraging students to understand the "isms" of the workplace and develop strategies for success despite them.

- James studied hard to learn the lessons of math and history detailed in his textbooks, but his lessons took on new meaning when he used them to complete a special manufacturing unit at *Henry Ford Academy*. History came alive as he watched a demonstration of 19th-century glass manufacturing (glass blowing) at Greenfield Village. He marveled at the impact of technology on society during his trip to a museum exhibit featuring the first lightbulb machines. Next came creation of a decorative mirror, which James designed and built himself. Finally, he made plans for mass producing his creation, projecting costs, sales, and profits. James' experience gave him a deeper appreciation of the relationships between classroom instruction and real-world business contexts. Now, when James looks at his mirror, he can reflect on his experience with pride.

- Sitting around a table, drinking pop and talking, students at the *Academy of Plastics Manufacturing and Technology* display the normal self-consciousness of 16 and 17 year olds. However, the transformation that occurs when students take a visitor into the plastics lab is dramatic. Dan, donning safety glasses, proudly shows the high-tech machine he has learned to operate, the parts he has learned to make, and the histogram record of quality tolerances he keeps and works to improve.

These are examples of how students at employer-linked charter schools are actively engaged in the learning process and how their classroom extends beyond the traditional confines of the school. The workplace and institutions in society are their laboratory for learning. Employer-linked charter schools provide the freedom to create an academic focus that breaks the traditional boundaries of content disciplines and how they are delivered. These schools plow new ground in developing the academic, social, and work skills and informal connections for which many education reform efforts strive

Meeting Workforce Development Needs

In the early 1900s, Henry Ford, inventor and entrepreneur, envisioned a world in which automobiles would be available to the common person. His view of education was built on a set of assumptions about the role of public schools in supporting the economy of that era—men would be trained to work on assembly lines and women would be taught how to take care of domestic needs. Times have changed and so have the assumptions that undergird business' expectations for the role of public schools in preparing students for the 21st-century workforce. As the following examples demonstrate, there are many different ways in which a charter school may serve our nation's workforce development needs as well as that of particular employers and industries. The case studies found strong emphasis on workforce development in many programs, and exciting differences in how these schools operationalized the preparation for life and work roles.

- The founders of the *Henry Ford Academy* created a model for public schooling that is linked to five developmental areas—academics, communications, technology, thinking and learning, and personal development. These are infused in learning projects and help frame how teachers relate to and evaluate students. Whether a student is interested in entering the workforce at graduation or going on to further their education, the academy believes that their graduates will be prepared to function effectively and responsibly in their chosen career.

- Leaders of the *Affiliated Alternatives Work & Learn Center* are cognizant of employers needs for highly trained and competent employees. They combine this focus with meeting the social and emotional needs of at-risk youth. The school encourages students to think in terms of building a productive future, to believe that school is a viable personal route to future opportunity, and ultimately to gain the self confidence necessary to pursue technical programs at graduation.

- The founders of the *Michigan Health Academy* are dedicated to preparing students for careers in the health field, a growing employment area everywhere with high demand for skilled workers. The course of study at the academy prepares students to earn specific certifications so that they may successfully compete for entry-level positions in area health care facilities.

- Historically, the East Bay Conservation Corps served out-of-school young adults through summer and year-round programs that educated them about the environment, gave them hands-on learning opportunities, and helped them learn citizenship by taking responsibility for their communities. Realizing that the modern workplace demands a comprehensive education as well as work-based skills, the leaders of the *East Bay Conservation Corps Charter School* are placing greater emphasis on competency-based instruction in academics, life skills, employability, citizenship, and communication.

- When representatives of companies who are partners in the *Academy of Plastics Manufacturing and Technology* visit students in person, they emphasize the many career paths that the school opens for students. These paths include immediate entry level jobs, positions requiring additional technical training such as CAD (computer-aided drafting), and careers that could require four or more years of college. As one CEO remarked, "We view this as an investment in the future of our industry. We want young people to be familiar with the industry and, hopefully, many may choose to stay with it. We have a crying need for people in this industry, and we want young people to be positively exposed to the real thing."

From broad models of systemic reform to programs offering and/or encouraging choices among career paths to specific programs designed to meet demands for skilled workers in a specific industry, employer-linked charter schools offer great flexibility in designing programs to address our country's workforce development needs.

Outside the Box - Charters and Traditional School Systems

Charter schools offer an opportunity to work outside the traditional school system to leverage change. Many of the educators and business leaders who founded these schools viewed charters as a way to avoid the bureaucratic constraints of the traditional public school. Very simply put, it is a way to get things done!

Charter schools do offer a vehicle for innovators and those interested in making change in education to "unbundle" the public education system—with its history, norms, and inherited patterns—and assemble a learning program to meet today's learning needs and goals for students and stakeholders such as employers.

For many employers in particular, the increased feeling of ownership afforded by direct involvement in school governance, curriculum development, and oversight is an attractive alternative to the frustration of working with the bureaucratic structures of traditional public school systems in their community. As evidenced by the examples outlined below, charter status has opened up new avenues for the development and delivery of innovative educational programs for students:

- Under Delaware's state school choice plan, many parents in the Wilmington, Delaware, area had opted out of the local schools by enrolling their children in other schools in the county, including non-public schools. Suffering from declining enrollment, the district launched a series of career or thematic academies to lure back students. But most of these academies continued to struggle. The county school superintendent in Wilmington had approached DuPont to assist with the financing of the district's math and science academy, but DuPont wanted business to have a voice in the management of the school rather than just give money. After supporting passage of Delaware's charter school act, DuPont took the lead in organizing a consortium of community employers who started and helped govern the *Charter School of Wilmington*—that had previously been known as the science and math academy.

- The *Academy of Plastics Manufacturing and Technology* was spearheaded by a nucleus of leaders from area firms who had become disenchanted by the well intentioned but unstructured school-to-work efforts underway in the community. They were attracted to the idea of being the governing group of a charter school—where they could set the agenda and direction of the school and drive the development of the curriculum. The education leadership at the St. Clair County Intermediate School District in Michigan wanted to embed a charter school within an existing vocational institution. They knew their vocational education advisory boards were not really working and wanted to break out of the mold of traditional vocational education. The charter school gave them the freedom to change. The county school district is counting on the success of the Academy to encourage acceptance of charter schools as a model for innovative educational delivery in other, existing, vocational programs.

In addition to serving as a vehicle for innovation in education, employer-linked charter schools can be developed to serve a variety of goals in affecting and influencing the existing school system and structure. Among the schools studied, some were constructed explicitly to use a new framework and demonstrate its power to be replicable within existing schools. Some were set up to compete with and push reforms withing the current system. Others schools were chartered—with the support of the district—as a way to breath new life and energy into dying and moribund existing schools. Many were created to serve special or niche roles within the area's existing school system.

The possibilities inherent in thinking and working "outside the box" that are offered by charter schools—as well as the deliberate ways in which these schools were designed to fit as part of change within the public school system—demonstrate both the breadth and power of change that can be afforded through these new learning communities. The following case study examples illustrate that kind of empowerment provided by charter school status:

- The *Palisades Charter High School* Governance Council adopted an ambitious mission to serve the educational needs of a diverse school community by using an interdisciplinary curriculum, opportunities for "real world" involvement, and the use of advanced technologies. Having previous experience with school district bureaucratic hurdles that prevented change and creativity in the best interest of students, the council's strong resolve to accomplish their mission led them to seek charter school status.

- At the *East Bay Conservation Corps (EBCC)*, there was some hesitation and reluctance about becoming a charter school. There was a resistance for fear that the bureaucratic structure of the public education system would limit the services they could provide. There were concerns that the corpsmembers' needs would not be fully met. Eventually, however, EBCC realized that the charter allowed for expansion of services and allowed them to build stronger programs. Now they can offer a diploma to their students, whereas before they could only offer a GED. The school now receives special education funds for the services they were providing for their students all along.

Unique Features of Employer-Linked Charter Schools

In addition to the broad themes of change afforded by employer-linked charter schools—there were a number of specific elements of learning that were uniquely and creatively redrawn in the profiled schools. Those elements involve curriculum innovation, raising standards, assessment of student achievement, flexibility in staffing, and the provision of adult role models and mentoring.

Curriculum Innovation

As outlined in the following examples, charter schools give teachers and business people license to develop new and innovative approaches to the curriculum—setting new standards for integrating academics with context-based instruction:

- At the *Henry Ford Academy*, the instructional day is divided into three two-hour blocks of time. The academic curriculum, which is aligned with state standards, is presented through the lens of manufacturing. In the morning, students study manufacturing arts (social studies and English). Mid-day activities include physical education, German, and lunch. They also receive academic coaching during a 30-minute period in which Ford Motor Company employees visit the school to provide remediation and/or enrichment for individual students. In the afternoon, students focus on manufacturing sciences (math and science). Throughout the instructional day, teachers strive to link artifacts from the Henry Ford Museum (where the school is located) to daily lessons. The academic year is punctuated by several manufacturing units which integrate academics into a project-based learning experience. One such unit has students learning about all the steps in the manufacturing of a decorative mirror—from initial design to planning and mass production.

- In addition to integrating resources between the school and external institutions, *Flagstaff Arts and Leadership Academy* is working to integrate arts and academics as well. The academic dean of the school described major focal units that serve to integrate the process of education as well as its products. For example, a unit on the Colorado plateau provides opportunities for integration of archeology, geology, anthropology, and the visual arts. While the process of developing full integration is still underway, some illustrations are instructive. When a Native American potter came to the Museum of Northern Arizona (where the academy is located) as an artist-in-residence, he had an opportunity to utilize artifacts from the museum's collection to illustrate for the students the historical antecedents of his own work. During his the potter's instruction on traditional techniques for firing clay pottery, the earth sciences teacher dropped in to discuss the chemical and physical changes that the heat of the firing process causes in the material. In this instance, museum resources and staff were effectively connected with both the arts and academics of the charter school.

- The curriculum at the *Affiliated Alternatives Work & Learn Center* is organized around four themes, one for each semester of the two-year program. Those themes include human interaction (child development, effective parenting, marriage and family), consumer competence (how to rent an apartment, balance a checkbook, get a job), citizenship and law (individual rights and responsibilities, government), and identity (discussion of difficult world issues, personal decisions, post-high school decisions and career planning). In addition to the major theme of each semester, each student has an individualized math program and literature that relates to that theme. Throughout each semester, each student learns to trust and bond with a single teacher who coordinates both classroom and related workworld activities.

- At the *Michigan Health Academy*, students learn about health-related occupations in an immersion setting which simulates a hospital in terms of workplace behavior expectations and skill sets. The curriculum includes classroom work interspersed with four separate weeks of exposure to actual work-based environments. Graduates of the program are not guaranteed jobs with sponsoring health care agencies but are assured that successful completion of the program will position them to compete successfully for available positions.

- At the *Academy for Plastics Manufacturing and Technology*, participating firms worked hard with the school district's Tech Center (the region's vocational center) staff to develop an industry-driven curriculum. They also devised ways the students could spend their time at the Tech Center learning the skills and processes important to the plastics industry. Students do class work and lab work on plastics mold-making machinery. Typically, students spend several weeks at the beginning of the semester in the classroom, learning blueprint reading, measurement, and plastics and metalworking tools and techniques. Later, they increase their time in the lab, making test and mock products—several of which are actual production runs of products made to the specifications and tolerances designated by member firms.

With the support, encouragement, and active involvement of employers, innovative educators are seizing the opportunity to develop new and exciting approaches to curriculum integration within a charter-school context.

Raising Standards

Setting high standards for achievement—and communicating those standards to students, their parents, and the community at large—was at the foundation of the employer-linked charter schools that were studied. That fact is clarified in the following examples:

- In its recruiting materials, the *Academy of Plastics Manufacturing and Technology* makes it clear that students choosing to enroll at the school will be expected to meet high academic standards and expectations. The goal of both the school's administrator and plastics industry partners is to enrich the curriculum to the fullest extent possible. The school's administrator is working to see the academic side of the program enriched enough with math and other skills so that academic credit for the Tech Center work can be gained from the home high school. The education committee of the plastics industry is developing national standards and assessments that will ultimately serve as a blueprint for the school's curriculum. Academy graduates will meet the defined standards for entry-level work in the plastics industry. In addition, the progression of skill standards between the academy and the local community college is becoming more fully developed.

- Leaders of the *Affiliated Alternatives Work & Learn Center* are taking issue with the historically low academic standards for at-risk students—a "dumbing down" of the curriculum that makes a boring instructional approach even worse. In response to recently adopted academic standards in the state of Wisconsin, the school has assumed a leadership role in developing a model curriculum and instruction based on a theoretical foundation provided through the Accelerated Schools model. The Work & Learn Center has accepted the challenge to design a model program for high school students that may ultimately be disseminated across the country.

- The *Charter School of Wilmington* combines an integrated, innovative, and rigorous math/science curriculum with a solid grounding in traditional subjects such as English and social studies. The school offers a college-preparatory academic program that includes one of Delaware's broadest selections of advanced placement courses and an array of elective courses such as astronomy, geology and geophysics, computer-aided design/robotics, and more.

- While *Flagstaff Arts & Leadership Academy* focuses on the arts, it maintains rigorous academic standards and a challenging academic curriculum. In addition, the institution places a strong emphasis on leadership demonstrated through community involvement. One of the requirements for graduation is the presentation and defense of a senior project. While project content varies dramatically, the commonality is that students must integrate arts and academics. The academy administers the same standardized tests which are commonly used in other Arizona public schools. Thus far, the performance of the student body has been among the best in the state.

As these examples illustrate, employer-linked charter schools are combining innovative approaches to curriculum with high academic standards in order to prepare students for success in the 21st-century work force.

Assessment of Student Achievement

Measuring success is important to the leaders of employer-linked charter schools. From a business perspective, one measure of success is the ability to attract and keep students. But even more important is the desire of founding partners to improve learning outcomes. As shown in the following examples, this increased attention to performance has led to the development of an array of tools to assess student achievement. Often these assessments provide additional, valuable information on student skills that go beyond the traditional or required state academic tests:

- The goal of the *East Bay Conservation Corps Charter School* program is to expose and prepare young urban adults for successful entry into the work force. At entry into the program, a large number of corpsmembers test at a second- or third-grade level on the Test of Adult Basic Education. Many of corpsmembers have received a high school diploma from a previous school but still are achieving at a third-grade level and are unprepared for the workplace. The school felt that a new curriculum needed to be developed, one that would define exit criteria for a diploma that would represent academic and workplace preparation. The charter school's curriculum now includes five competencies—academics, life skills, employability, citizen ship, and communication. These levels of competency allow for certificates of mastery at specific points of achievement. In addition to the academic component, through work-based experience corpsmembers can be certified for using heavy machinery and tools such as forklifts, chainsaws, and weed-eaters. They can also earn certification in CPR and first aid. Unfortunately, the average stay of a corpsmember at the school is between four and six months. The personal problems and survival issues these individuals face make it very difficult for them to complete the program. But the leaders of the school specifically designed the programs with this reality in mind.

- The goal of the *Charter School of Wilmington* is to have 100% of its students attend college. In order to measure student performance, standardized tests are administered to all students at the end of the academic year. The school's first-year median student score was at the 75th percentile. The second year, the score was at the 86th percentile. The Charter School of Wilmington's students earned the highest scores in Delaware on writing assessments in 1997 and the highest student attendance rate in the state.

- Despite its career orientation, most, if not all, students at *Skills for Tomorrow High School* plan to go on to college and feel that the school is preparing them to achieve that goal. As a culminating experience, students present their portfolio to a panel of employers and other community members who prepare questions for the graduate. The presentation is typically

attended by other students, friends, and family. For students and faculty alike, the portfolio presentation is a profound experience in which the students tell the world who they are, what they have accomplished, and what they aspire to. As both a test and a ritual, it serves as an important transitional point for students.

- Students at the *Academy of Plastics Manufacturing and Technology* are graded on a combination of their attendance, performance on quizzes and assessments around substantive knowledge, and actual performance in the manufacture of metal and plastic parts. One unified grade point is awarded from this combination of assessments.

The employer-linked charter schools that participated in this study serve a broad range of students. They use an array of different program structures, with different sets of outcome goals and expectations for student growth and development. The research team found that the tools used to assess the success of these programs varied accordingly. However, there was not yet much emphasis on systematic efforts to collect and analyze quantitative data, and there was little effort to track short- and long-term outcomes for students.

Flexibility in Staffing

In addition to having license to develop innovative approaches to curriculum, employer-linked charter schools offer greater flexibility in dealing with staffing issues. The following examples illustrate this flexibility:

- At the *Affiliated Alternatives' Work & Learn Center*, teacher certification requirements threatened to destroy the carefully crafted relationships between teachers and students that were at the core of the center's educational program. In order to strengthen the bond between students and teachers, the academic schedule was specifically designed so that a student would spend an entire semester with a single teacher who taught across the curriculum. This approach was inconsistent with the local school district mandate that

restricted teachers to teaching within their area of certification. It was the school's charter status that allowed it to continue the practice.

- The teachers at the *Charter School of Wilmington* are not unionized—they are referred to as partners, not employees. Their base pay is the lowest paid in the state, at 95% of what public school teachers make. However, because they are eligible to receive an annual bonus based on the school's performance, in its second year the teachers at the Charter School of Wilmington were the highest paid teachers in the state. The bonus—which is determined by an advisory board consisting of business people, parents, and representatives of the community—is based on school performance in terms of finances, student performance, and parent satisfaction.

- At the *Academy of Plastics Manufacturing and Technology*, staff hired to teach the program are outside the collective bargaining unit of the other instructors in programs at the regional Tech Center. They work all year, participate in more professional development, and generally perform under different expectations. These expectation are more in line with the pace, decision making, and culture of the firms they work with. As the school is run year-round like member firms, staff can get professional development and training on an ongoing basis as part of their job.

Whether it is the ability to offer creative staffing solutions that enhance instructional practice, create new incentive structures that reward employees for high performance, or involve teachers in the activities and culture of participating firms, charter schools allow school organizers and operators to make decisions about staffing that break traditional patterns. The starting point for staff decisions can be deciding what is the best skill-mix, structure, work routine, and professional development that can meet the goals of the school, its stakeholders, and students. While the schools that were studied were still off redrawing their staffing plans and activities, and did not yet have it all figured out, they were struggling hard to make those decisions.

Role Models and Mentoring

Learning what careers are all about is an important first step in developing a plan for the future. Understanding what people actually do in the workplace, the skills they need to perform their jobs effectively, and how they behave toward others, is essential to making an informed career choice. It is also important to appreciate, model, and, ultimately, master the work cultural norms that afford work and career success. Mentoring (both formal and informal) gives students the opportunity to connect with employees and to learn from them what it takes to be successful in the workplace. As outlined in the following examples, the case study schools provided a rich environment for formal and informal learning and for connection-building with adults:

- The *Henry Ford Academy*, which is housed in the Henry Ford Museum, has become a type of laboratory. It facilitates the study of history and historical artifacts and, at the same time, provides for the development of citizenship and personal behavior management. Unlike traditional high schools, students at the academy have to adapt their behavior to the environment and culture of the museum. This means strict expectations for orderly behavior and showing respect for staff and visitors. In return, students enjoy the opportunity to interact and connect on a regular basis with adults representing a variety of occupations in the museum as well as adults at the nearby Ford Motor Company headquarters.

- At the *Academy of Plastics Manufacturing and Technology*, representatives from partnering firms have been very active in visiting interested students and pitching the academy's program. Wearing shirts with the academy logo, board members and representatives visit students and describe the career opportunities available in the plastics arena. Participating firms also provide paid work experience for students over the summer. Getting the employers to commit slots for internships has not been hard, since participating firms recognize the value of getting students to think in terms of a career in their industry. Supervisors work with the young people and suggest that the best benefit of the academy's

program is seeing that the kids are comfortable in the workplace, around the machines, and with other people.

- Through the Museum of Northern Arizona's museum studies program at *Flagstaff Arts & Leadership Academy*, students have the opportunity to learn directly from members of museum staff what is involved in management and operation of the museum. Some students have been employed by the museum, while others have work experiences outside the museum—working for professional arts organizations in the Flagstaff community. These arts institutions operate as businesses and employers and, thus, expose the students to real career opportunities.

- At the *Charter School of Wilmington*, there is a strong emphasis on workplace exposure. Corporate representatives, including each partnering company's CEO, visit the school regularly to help students understand business' expectations and to help students focus on college and career goals. Upperclassmen participate in a "job-shadowing program" during the school year. As part of this experience, students visit corporate sponsors and are matched with a mentor—a business professional or scientist, for example—who helps them see first-hand what their career field is really like.

One of the hallmarks of employer-linked charter schools is the emphasis placed on real-world experience and personal connections between students and mentors in the workplace. Internships, mentoring, and job-shadowing demonstrate how employers are using their vast resources to help students understand the needs of employers. These experiences allow the students to relate their academic work to real-world applications.

Summary Implications

The case studies presented here, in and of themselves, cannot provide a clear-cut assessment of the strengths and weakness of employer-linked charter schools. They were deliberately chosen to represent the most powerful and interesting examples of how the charter school vehicle could facilitate an employer-connected learning program. As such, the charter schools that were studied paint a rosy picture of the possibilities—without balancing that picture with, potentially, equally powerful portraits of charter schools that did not live up to their promise (at best) or had to be closed for misrepresentation or mismanagement (at worst).

However, the purpose of the employer-linked charter school project and related work is to encourage and support improved student outcomes through charter schools. The project also seeks to describe how these schools can be used as powerful vehicles for improved student learning and business/community involvement in education.

The case studies, each detailed more fully in the Appendix, do appear to offer the following by way of summary observations:

Employer-linked charter schools provide compelling, positive evidence of what charter schools can accomplish. The project team had no inkling of the scope and creativity with which charter school visionaries would use their opportunity to refashion learning. In many ways, these schools often got totally "out of the box" as defined by traditional education environments. The high degree of satisfaction on the part of students, faculty, and employer/community stakeholders with these charter school speaks of their potential power. The many examples of mold-breaking school missions, treatment of content, and teaching and learning activities revealed in the case studies illustrate what can happen when entrepreneurs and visionaries are unleashed. Whether these charter schools and others can keep up their energy and creativity—and whether the performance of these schools can go beyond the initial

excitement and satisfaction of their partners—will be the test of their staying power and ultimate success.

Employer-linked charter schools can "up" the level of ownership by the business community. Charter schools offer a quantum leap in the involvement of business, or any sponsoring organization in educational programming. With the responsibility of actually governing the school comes new opportunities as well as new challenges. For business partners, this means a whole new level of ownership and investment—both in terms of financial and human resource commitments and in terms of the psychological ownership of the process.

In giving business partners the chance to actually run the school and decide policy, employer-linked charter schools can allow the businesses to do things they always say they want to do, things that are important in the business culture. This includes hiring the right people, being performance-based, deriving a learning program from the outcomes you want to achieve (versus the other way around), and working year-round. Plus, there is additional interest in providing the human resources, student and teacher exposure to the workworld, and support systems and technology necessary for success. But there is also the real day-to-day challenge of running a school. This means that business partners need administrators and educators who know about schools and their culture.

The charter schools' relationship with public school systems can take many forms. The employer-linked charter schools profiled here fit many niches in their local educational landscape strategies. Not often created as "heads-up" competitors to traditional public schools, these path-breaking schools were developed to fill a learning niche that did not exist within the public school system. Similarly, some were created to fundamentally transform an existing "niche" (a high school, a vocational program, etc.) that was not performing.

The common perception among many is that charter schools are focused primarily on competing with existing schools. However, this project, overall and among the individual

cases studies, found more evidence of schools that were created with the support of the local school district, as part of its strategic plans. Many of the schools created outside of this context were so specialized and focused on a problem area (drop-outs, at-risk students, etc.) that they were welcomed by the local educational systems. In sum, the relationship of the employer-linked charter school to the institutional structure of the school system is as varied as the schools themselves—thus making the consequences hard to predict.

Employer-linked charter schools serve diverse as well as disadvantaged student populations. Of particular interest to the U.S. Department of Education and the project team was the degree to which charter schools, in general—and employer-linked charter schools, in particular—could effectively serve disadvantaged and hard-to-serve populations. Consistent with charter schools nationally, employer-linked charter schools appear focused disproportionately on disadvantaged populations. The cases studies provide compelling evidence that charter schools can engage at-risk or out-of school young people in creative programs that promise positive results. The East Bay Conservation Corps Charter School, the Skills for Tomorrow High School, and many other employer-linked schools around the country illustrate the "out-of-the box" possibilities that charter schools afford for disadvantaged students.

In addition, schools like Michigan's Henry Ford Academy show the potential for charter schools to achieve a needed goal of public education—the socioeconomic and racial integration of the student body, while setting and reaching high standards. This academy's students come from the city of Detroit and from Detroit's wealthy suburbs alike. It deals with a diverse student body and incorporates them into one powerful learning program.

Employer-linked charter schools are an experiment in progress. These schools, like charter schools across the country, are new and still face the test of time. The case studies do tell us that—while these schools may be powerful venues for testing a different approach to learning—start-up is difficult and time consuming. The first few years are defined by redirection, redefinition, and continual problem-solving and troubleshooting. The demands of running a

business, administrative headaches, and efforts to implement a newly designed learning program all make for a chaotic first few years. Several employer-linked charter schools will now face the first tests of graduates emerging into the labor market, and evidence will become available on how they fare. Continual evaluation of these "works in progress" will be important in order to document the extent to which the initial creativity, energy, and passion translate into better outcomes.

Section Two: Case Study Methodology

The intensive case studies described in this report play a pivotal role in the overall design of the employer-linked charter school project. They build on the initial findings of the inventory report and branch into additional products for dissemination. This section describes how the case studies fit into the overall project, how the cases were identified, and the methodology of the studies.

Background

The information base that set the stage for this case study report is found in a document that summarized the first stage of Phase One of this project—*An Inventory of Business-Linked Charter Schools*. In that document, the project team described the steps that led to the development of a national inventory of charter schools with a significant employer-link.[8] Using a variety of strategies and sources, a group of career-oriented charter schools was nominated for inclusion in the inventory. The study team found that of approximately 750 charter schools in existence nationwide in the spring of 1998, over 70 were developed as employer-linked. A basic profile of each school was then created using information assimilated from several sources, including World Wide Web sites, printed documents, and discussions with school leaders. The inventory report, which was completed in April of 1998, includes summary profiles of these 70 schools.

[8]A full description of the school identification strategy can be found in PPA, NAB, MFI, *An Inventory of Business-Linked Charter Schools, Appendix A*, p. 1-2. Research report submitted to the U.S. Department of Education, April 1998. See also http://www.nab.com/schooltowork/charterschools/

The project team organized this broad array of approaches to school-business partnerships using a conceptual framework derived from the "best practices" of school-to-career programs.[9]

The following key elements were described for each school:

- Defining Purpose
- Learning Standard
- Curriculum
- Worksite Learning
- Governance
- Career Purpose.[10]

Together, these elements captured the nature of engagement in the development, design, operation, and assessment of employer-linked charter schools. They also became the basis of a typology that was used to array schools by the intensity of their business engagement. Ultimately, the employer-linked charter schools clustered into four broad types of career orientation. Those four clusters are described as follows:

- **Career-Preparation**: This cluster of schools has a strong industry focus, with emphasis placed on preparing students for specific careers linked to occupational certifications and credentials.
- **Career-Focus:** This cluster of schools focuses on preparing students for careers within broad occupational groups or industry sectors and are linked to internships and other work-based learning experiences.
- **Career Informed:** This cluster of schools promotes educational achievement and

[9]See for example, Pedraza, R., Pauly E. and Koop, H. *Home Grown Progress: The Evolution of Innovative School-to-Work Programs,* MDRC: September 1997; and Goldberger, S., Kazis, R., and O'Flanagan, M. *"Learning Through Work Designing and Implementing A Quality Worksite Learning for High School Students,"* MDRC/Jobs for the Future. January 1994.

[10]For a discussion of these elements see *An Inventory of Business Linked Charter Schools, Section Two: Typology,* p. 7-14.

lifelong learning through the use of workworld-, context-based instruction and experiential learning.

- **Non-Career Partnership:** This cluster of schools receives goods, services, or technical expertise from business partners. However, the business relationship does not influence the program learning standards and does not provide worksite linkages, career information, or opportunities for employer guidance and governance at meaningful levels.[11]

Eventually, nine of the charter schools that were mapped according to the above typology were selected for intensive case study.

Purpose of the Case Studies

The case studies allowed the project team to move well beyond the limitations of the inventory report, which relied primarily on secondary sources of information. Site visits provided an opportunity to focus on a host of practical charter school development issues as experienced by school organizers and operators. They also allowed researchers to gain a deeper understanding of the unique characteristics of each school. Through intensive case study, the project team hoped to accomplish the following:

- capture compelling descriptions, images, and success stories for businesses and other community stakeholders potentially interested in developing new employer-linked charter schools
- identify and gain insight into the problems encountered and the key obstacles to surmount in employer-linked charter school development
- identify a network of practitioners with experience in designing and operating employer-linked charter schools who can be called upon for advice and support

[11]Schools falling in this cluster are outside the focus of this project.

The case studies set the stage for the development of technical assistance materials that blend best practice and model school-to-career programming with an understanding of the practical issues of charter school development and operation.

Case Study Selection

Criteria

In an effort to identify a manageable number of schools for intensive case study, a selection strategy was developed. Mindful that the ultimate goal of the project was to reveal powerful charter school approaches that would inspire others to create schools in their own communities, the selection of case study schools was guided by the criteria presented in Table 2.

Table 2:Criteria for Case Study Selection	
Marketability	This factor refers to the potential power of the model to inspire action and replication on the part of other new charter school development stakeholders—particularly the business community.
Diversity of industry focus	This concerns the diversity of specific industries and industry clusters involved in the charter school program.
Target population	This factor refers to the diversity of the students served—including the disadvantaged, at-risk populations, out-of-school youth, and majority/minority focus.
Career orientation	This factor refers to the diversity of intensity of the engagement with business, as defined through the typology contained in the inventory report (see page 32). This ranged from highly intense, career-prep to less intense, career-informed programs.
Stage of development	This reflects the length of time the school has been operational. It was felt that selected schools should have a sufficient experience base to inform the development of other schools.
Geographic diversity	This factor involved the geographic distribution of schools representative of the national scope of career-oriented charter schools identified in the inventory report.
Student location diversity	This factor refers to the diversity of student population and includes schools serving students from a variety of settings (i.e., urban, suburban, and rural).
Scale/Size	This concerns the designated size of the student population, from small- to large-scale learning environments.

Case Study Sites

Based upon the above criteria, the project team winnowed the field of the inventory scan down from 70 to 21 schools. These 21 included powerful models and illustrations of employer-linked charter schools and are included in the Inventory Report.[12] Further refinement came

[12] Read the description of these schools in the Appendix of this report.

through project team discussion of the proposed schools that was, again, based upon the outlined selection criteria. A final list of case study sites included the following employer-linked charter schools:

- *Affiliated Alternatives Work & Learn Center* (Madison, WI).
- *East Bay Conservation Corps Charter School* (Oakland, CA)
- *Flagstaff Arts and Leadership Academy* (Flagstaff, AZ)
- *Pacific Palisades Charter High School and Math, Science & Technology Magnet* (Pacific Palisades, CA)
- Michigan Trade Academies—including the *Michigan Health Academy* in Detroit, MI; the *Henry Ford Academy* in Dearborn, MI; and the *Academy for Plastics Manufacturing Technology* in Port Huron, MI
- *The Charter School of Wilmington* (Wilmington, DE)
- The *Skills for Tomorrow High School* (Minneapolis, MN)

These nine sites selected for intensive case study provided the project team with an opportunity to examine more closely a broad range of career-oriented programs that had been successfully developed by educators and business partners working together in a charter school context. They illustrate some of the most promising practices identified through the inventory process. However, they are *not* intended as a representative sample of all charter schools or even all employer-linked charter schools currently in operation.

Methodology

Members of the project team visited each site during the spring of 1998. Each visit lasted approximately two days. While on-site, team members learned about the school from a variety of sources. In addition to gathering written documents, the visiting researchers hoped to conduct the following activities:

- Discussions with the school director and key staff

- Tour of the facility
- Student roundtable discussion
- Teacher roundtable discussion
- Parent interview/roundtable
- Key business partner interviews[13]

The above list was intended as a starting point for learning about each school. The project team understood that not all of the activities would be possible at a given school. On the other hand, the team also realized that there might be avenues for learning that could not be imagined in advance. In both cases, the team tried to be very flexible and open to the school's ideas about how to best capture the experience of developing and operating an employer-linked charter school.

Research Questions

The project team used a general set of research questions to frame the inquiry. The research questions, which link closely to the elements of the typology (see page 32), focused on the following set of issues as they related to the development of employer-linked charter schools:

- How did the process begin?
- Who initiated it?
- Why was the idea of a charter school attractive?
- What was the founder(s)'s mission and goals?
- How were community organizations recruited for partnership?
- What were the major developmental obstacles?
- How were the interested business networks identified?
- How did community organizers and educators effectively talk and work with employers toward building the school?
- What is the structure and governance of the coalition?

[13] A full discussion of the research method can be found in the Appendix of this report.

- How were parents persuaded to enroll their children?
- How were students identified and recruited?
- How are students supported in their studies?
- What funding was needed for start-up and planning?
- What are examples of effective development processes and effective teaching and learning strategies?
- What are key elements of success as viewed by business and other partners?

Using these and other related questions that emerged in the course of the actual site visits, the project team developed detailed case studies of the employer-linked schools profiled in Table 3. The key findings of the case studies are reported in Section One.

Table 3: Employer-Linked Charter School Case Study Sites

Academy for Plastics Manufacturing Technology **(Port Huron, MI)** Grades: 11-12 Enrollment: 83	This school is a special program offered within the larger school district. A charter school format was used to rekindle the interest of the business community after an earlier effort to develop a related program failed. Business partners make all policy decisions, leverage donations from manufacturers of equipment used in the plastics industry, recruit new students by visiting schools to speak with those who have indicated an interest in the program, and provide work-based learning opportunities for students. Two of the school's business partners are active members of the plastics manufacturing industry's education committee which is currently developing industry standard certificates and national standards. Students focus on meeting industry-specific skill standards and explore career options while learning specific process technology skills. The school is open to all students, but marketing materials state that the program is academically rigorous, with algebra, geometry, and chemistry recommended prior to enrollment.
Affiliated Alternatives Work & Learn Center **(Madison, WI)** Grades: 11-12 Enrollment: 60	The Work & Learn Center is an alternative school conversion operating within the Madison School District. The school, which was initiated in 1977, serves as a drop-out retrieval program and offers a sequence of courses leading to both a diploma and a job with career potential. The curriculum is organized around four themes—human interaction/social skills, consumer survival skills, citizenship and law, and identity. Students are gradually introduced to the world of work through a developmental sequence of placements—from sheltered/non-threatening work in day care centers to home construction to nursing homes to specific career exploration opportunities from which they select a placement which they may keep at graduation. The school targets students in poverty and is particularly active in working with students from families where work is not the rule.

Table 3: Employer-Linked Charter School Case Study Sites

East Bay Conservation Corps Charter School **(Oakland, CA)** Grades: Ages 18-24 Enrollment: 110	The East Bay Conservation Corps created its charter school to serve the needs of out-of -school, urban youth. The majority of students are between the ages of 18 and 24. Corps students are non-high school graduates that are returning to school to gain work experience, employability skills (work ethic, reliability, flexibility, teamwork, leadership, etc.), and general academic knowledge. The framework for the program is derived from the SCANS 2000 report and school-to-career concepts. Two evenings a week are spent in class covering basic academics. Concepts learned in the field are integrated in the academic lessons. The school has several business partners who assist with donations, advise them on workplace issues and trends for their curriculum development, and provide internships for students. The school puts great emphasis on work-based learning and utilizes business in the creation and implementation of such opportunities for students.
Flagstaff Arts & Leadership Academy, **(Flagstaff, AZ)** Grades: 9-12 Enrollment: 135	This school, which is located on the grounds of a museum, has a special focus on the visual and performing arts. The primary purpose of the business link is to develop an appreciation for the arts as kids grow to adulthood. The staff of the museum participate in every facet of program support. The school offers an integrated curriculum in an immersion setting (the museum). Artists from the region and nation assist in curriculum development. Students currently participate in community service projects and have an opportunity to do an apprenticeship in the museum. Professional artists are in residence at the school and provide role models that expose students to career options and choices within career clusters. The school serves an overwhelmingly poor population of students (drawing from both urban and rural communities), with a rigorous college-prep program.
Henry Ford Academy **(Dearborn, MI)** Grades: 9-10 (phasing in grades 11-12 over the next two years) Enrollment: 200 (400 by the year 2000)	This academy began as a collaboration between the Ford Motor Company, Henry Ford Museum and Greenfield Village, and the Wayne County Intermediate School District. The core mission of the school is to develop graduates who are ready for the future—whether that means college, skilled trade apprenticeships, or jobs in the global, technological workplace. The curriculum is academic/college-prep, with context-based business projects. The curriculum is presented through the lens of manufacturing arts and sciences. Students also develop the key soft skills demanded in today's workforce (teamwork, communication, etc.). The business partners are involved in a wide range of activities—playing a guiding role in defining the mission of the school, encouraging employees to act as mentors to students, and providing students with internship and job-shadowing opportunities in the workplace. They also give students access to the latest communications technologies and computers. The goal for student recruitment is to represent the demographics of Wayne County, including a proportionate number of disadvantaged students. Enrollment is by lottery from applicants, and demand has considerably exceeded the supply of slots.

Table 3: Employer-Linked Charter School Case Study Sites

Michigan Health Academy **(Detroit, MI)** Grades: 11-12 Enrollment: 80	This school was organized through the joint efforts of the Henry Ford Health System, Oakwood Health Care Center, and Synergy Training Solutions (which developed the integrated health career curriculum). Partners share a commitment to health careers and work as a cohesive unit supporting the development of the school. The business partners do not promise jobs to graduates. However, the curriculum is structured so that students who develop the offered skill sets should be highly competitive for employment or entry into technical training opportunities. Classroom instruction integrates basic skill development with academic course work. Business partners donate equipment and provide job-shadowing opportunities and longer clinical experiences for 12th graders. Students earn a variety of health care-related certifications.
Pacific Palisades Charter High School and Math, Science & Technology Magnet **(Pacific Palisades, CA)** Grades: 9-12 Enrollment: 2,480	Parents and educators initiated this school, which consists of a general population of students with 70% minority. Individual business partners represent service, retail, and entertainment industries. The core mission of the school is to prepare students for the global/technological society of the 21st century. The school uses the business context as a teaching tool. The curriculum is academic/college-prep and incorporates academic competencies set by the state as well as general skill standards. Students receive information about careers and are exposed to career clusters and options. Work-based learning experiences are highly structured and tightly linked to the curriculum. Success is measured by students having post-secondary plans upon graduation.
The Charter School of Wilmington **(Wilmington, DE)** Grades: 9-12 Enrollment: 400	This school was founded by a consortium of six local companies including Bell Atlantic, Connectiv, DuPont, Hercules, Christiana Care Health System, and Zeneca These chemical and communications companies—together with teachers, parents, and community leaders—founded the school on the premise of preparing a diverse student population for success in a fast-changing and highly demanding technological world. The curriculum is based on mathematics, science, and technology. The school sets high expectations for academic achievement, maintaining an environment conducive to learning and character development. There is an emphasis on the development of analytical and quantitative skills. The business partners are involved in many facets of the school's operation. The consortium works with the school to expose students to professional career information. Sponsoring corporations send their presidents and CEOs to speak with students. Corporate partners also host the required "shadowing/internship" program for all juniors.
Skills for Tomorrow High School **(Minneapolis, MN)** Grades: 10-12 Enrollment: 75	This school began as a cooperative effort of the Teamsters and Teamsters Service Bureau, the Minnesota Business Partnership, a professor from the University of Minnesota College of Education, and the Rockford School District. Rather than targeting specific industries or job clusters, teachers strive to help students identify areas of vocational interest and explore related career options. The curriculum is multi-disciplinary and experiential, with a focus on basic skills. Students are introduced to the workplace in three phases—job shadowing, service learning, and a more formal internship experience. Throughout the process, they are encouraged to "find their passion," think about areas of occupational interest, and actively pursue career goals and interests. All students develop portfolios which are presented to a panel of business people who decide if the student is ready to graduate.

Site Summaries

The matrix presented in Table 3 provides a brief overview of each case study site using information distilled from the inventory summary report. The matrix is included here to orient the reader to the schools referenced in Section One of this report. A full case study report for each site can be found in the Appendix of this document.

Summary and Next Steps

The case studies presented here sought to capture the dynamics of the schooling experience from the perspective of the key stakeholders, students, parents, business partners, educators, and other members of the community. The case studies yielded a tremendous amount of useful information—including curriculum materials, employer surveys, alternative approaches to student assessment, learning theories used to guide curriculum, certifications, integration of academic standards with career-oriented sample texts, scope and sequence of courses, and specific approaches to designing work-based learning experiences (to name just a few). The lessons learned through these schools' development—including their trials, tribulations, and successes—are available in the full case study descriptions found in the Appendix and will be incorporated into the project's "how-to" guide, talent bank, and other resource materials.

Case Study

Affiliated Alternatives - Work & Learn Center

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This booklet is one in a series of case study reports on employer-linked charter schools. An employer-linked charter school is a special type of public charter school in which an employer organization or network joins with educational entrepreneurs in a collaborative partnership to develop and operate a workworld-informed educational program. Because charter schools are exempt from many regulations governing traditional public schools, they have more freedom to develop innovative educational programs. In exchange for this flexibility, charter schools are held accountable for student performance.

Currently, there are over 100 employer-linked charter schools in operation across the country. The way these schools focus the engagement with employers and other community institutions ranges widely—from very focused career preparation, to those that incorporate modest exposure to jobs, careers, and employers. Some schools target industry-specific competencies and careers. Others focus on equally powerful and dynamic uses of employer worksites—providing life and work roles and tasks to enrich academic learning, build life skills, and provide rich and nurturing environments for mainstream and troubled youth alike. The schools profiled in this series are led by some of the brightest and most dynamic educators and business leaders in America. Despite the many challenges involved in moving from a vision of schooling to actual operating reality, the leaders of these schools are succeeding in making a new form of education available to a diverse population of students in urban, suburban, and rural communities across the nation.

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Case Study: Wisconsin

"For me, 45-50 minutes of contact time in a classroom with 25-30 students wasn't fulfilling as a teacher; there wasn't an opportunity to impact the lives of students. Here I have the students for two years: I can see them change. It feels more like an extended family than a classroom."

-Work & Learn Teacher

"Someone from the school invited me to get involved. I remembered I had a friend whose daughter went to the school. The experience turned her around. When you think of what the alternative would have been its even more impressive."

-Bill Haight, President, *In Business/Magna Publications, Inc.*

"The purpose of the program is to emphasize the future."

-David, Work & Learn Student

Overview

In late 1976, the Madison, Wisconsin Public School District faced a growing problem. The majority of high school students had successfully made the transition from junior high to high school and were on track to complete their graduation requirements. Yet, there were other students who were far less content, having earned fewer than six credits during their first two years of course work and, therefore, having failed more than 50% of the courses attempted. For these students, high school was an exercise in frustration, failure, and alienation.

Recognizing the need to reach out to these students, the founders of the Work & Learn Center (WLC) designed a school option tailored to the particular needs of at-risk youth and opened it as a school within the Madison Public School system. The center was originally called The Center for the Study of the Relationships, Skills, and Vocations of People (RSVP). Although it has since changed its name, the original founders of RSVP maintain leadership positions at the school. Their dedication to providing at-risk students with the opportunity to not only earn a high school diploma, but also to regain a sense of self worth and career direction has remained strong.

One of the trademarks of the WLC is the intensity of the relationship between students and their teacher. Each semester, students have a single teacher who takes responsibility for teaching across the curriculum. External pressure to comply with teacher certification requirements that limited teachers to working within a single academic certificate area threatened to undermine the WLC program philosophy. In response to these pressures, the WLC converted to charter status in 1996. Conversion allowed the school to continue the practice of having their certified teachers instruct across content areas. Charter status also allowed the teachers and

students greater flexibility in scheduling and arranging work-based learning experiences.

Program Philosophy

For the average student, coping with the size and impersonality of a large, traditional public high school can be difficult. A student who receives little guidance and emotional support from home, the experience can be overwhelming. Without the social bonds of the family to support them, the motivation and drive to remain in school through graduation can often falter.

The founders of the WLC turned to the academic literature on the psychological and social needs of adolescents for guidance in designing an educational program to meet these needs. They drew from what in 1977, was state-of-the-art thinking regarding the psychological and social causes of delinquency.

The WLC program was designed using two core theoretical perspectives: social bonding theory and opportunity theory. These perspectives resulted from research indicating that critical elements are missing in the lives of some youth, leading to problems such as delinquency and dropping out. Missing, according to these theories, is a sense of bonding—belonging, affiliation, commitment—to maintain the motivation necessary for success in school. Also lacking is the perception that school is a viable personal route to accessing future opportunities.. If there is a perception that personal success in school is not possible, or that school success will not result in increased opportunities after high school, students are discouraged from putting forth the effort needed for school achievement.

These theoretical perspectives provide a foundation for the charter school's approach to linking school-based learning with meaningful work-based learning experiences.

Program Description

The Work & Learn Center is designed to be a supportive environment. Students enter the program in groups of 16 and stay together as a group throughout the program's two-year sequence. There are high expectations for attendance and work completion that challenge students to make a real commitment to the program. At the same time, there is an emphasis on fostering "social bonding"—close affiliations within the instructional group, with teachers, and with employers. These basic program design elements work together to support student learning.

The WLC academic program is organized around four themes, one for each semester of the two-year program. These themes are human interaction (child development, effective parenting, marriage, and family), consumer competence (how to rent an apartment, balance a checkbook, get a job, etc.), citizenship and

law (individual rights and responsibilities, government, etc.) and identity (discussion of difficult world issues, personal decisions, post-high school decisions, and career planning).

The center also has a career development component that parallels and relates to the academic program. For example, during the first semester (human interaction theme), students work at daycare centers that serve as a laboratory setting for studying child development and effective parenting. Since several of the center's students are pregnant teens, this component of the program is particularly useful and relevant to their lives.

In the second semester, students study mathematics, apply their math skills in making purchases of home furnishings, and use those skills while working on a construction crew building a new home. In addition to gaining experience making consumer decisions, such as buying light fixtures and carpeting, students develop a sense of pride and satisfaction in creating a finished product. It should be noted that the goal of this experience is not to identify students wishing to pursue a career in home construction. Instead, the goal is the opportunity, in an employment context, for students to build the skills necessary to succeed in future work and in life. Those skills include teamwork, trust, reliability, punctuality, and self-confidence.

Third and fourth semesters involve career exploration internships and, finally, placement in a supervised job related to a career interest. In the third semester of the program, students study the biological factors that contribute to Alzheimer's disease, study the characters and plot of the movie "Harold and Maude," read a story that features an elderly person, and participate in a service-learning placement in a day center for the elderly. Again, the goal of the placement is less an experience in career exploration as it is an avenue to help build student compassion and character. During the fourth semester, there is also an emphasis on developing future educational plans. There is significant contact with the local technical college, which is typically the next school for those WLC graduates who choose to continue their education.

The center has constructed a school environment and activities to directly encourage social bonding and ensure future opportunity. The integrated curriculum helps students see the link between the classroom and real world experience. In addition, the career education focus—that leads to a paid training program and a job that the student keeps after high school—creates an actual relationship between school success and future opportunity.
The WLC recently established a partnership with AmeriCorps, allowing students to build houses and work in construction under the auspices of this federal government program. It involves a full semester, 300 hours of service where students build low-income housing. In addition, students receive a small monthly stipend as AmeriCorps volunteers and a one-time $800 college scholarship. The scholarship money can be used any time within a seven year period after graduation and can go toward a four-year college program or a proprietary school, such as vocational training.

Throughout their tenure at WLC, students maintain a portfolio containing major pieces of work and the results of specific career exploration and development activities. These activities include interest and ability inventories and testing, reports on specific careers that interest the student, and an exit counseling interview where the student discusses his/her long-term plans and goals.

Student Life

Students wishing to enroll in the WLC are required to make a personal commitment to the program. Students receive written program information along with an invitation to attend a group orientation session. At the orientation session, students are told that if they are serious about enrolling, they must schedule a personal interview with a member of the school's staff. Understanding the school's expectations for personal behavior and making a personal commitment to the goals of the program are essential first steps for students who enroll at the WLC.

Unfortunately, many of the students who enroll at the WLC do not have a supportive family. Some students are pregnant teenagers living on their own; others have run away from home, some have previously been incarcerated and others are struggling to live independent lives. The support and encouragement students receive through the WLC helps motivate them to continue with their studies.

The key to success at the WLC is commitment. Success means more than completing a certain number of credit hours. Indeed, student achievement is not recorded as earned credit hours. As students complete each semester's program requirements, they take another step toward graduation. Graduation from the WLC signifies that students have experienced a successful personal and social transformation. For example, Kim, a student in her first semester of the program, said "Because of my native culture, in my family, there was no closeness or hugging. Since coming here, I've learned it is okay to show affection." Tom, a second semester student working at a home construction site remarked "Years from now, when I drive past this house, I'll be able to say 'I helped build that house." Kevin, a third semester student working at a daycare facility for the elderly, proudly displayed a memory game designed to engage the Center's participants in recalling some of the important moments of their lives. Jenny, a soft-spoken and rather shy young woman in her fourth semester at the center, spoke proudly as she led a guided tour of the Alzheimer's facility where she worked—sharing her plan for earning a certificate as a nurse assistant and her dream to build a good life for herself and her infant child. Kevin, a young man whose juvenile delinquent tendencies landed him in the local jail, displayed determination to overcome his past, build a new future as a full-time employee at a local book bindery, and ultimately enroll in a technical college program. For many students, the school experience leads to a fundamental shift in thinking about themselves and their own childhood experiences.

Business Involvement

The WLC is fortunate to have developed a network of employers within the community that understands and supports their efforts to reclaim delinquent youth. The Center's teachers recruit community employers to provide work-based learning opportunities for students. According to the director of a local daycare center that serves as a first stop for many of the Center's students, the intent of their involvement is not to identify future daycare center employees. They participate in the WLC educational program because they feel a responsibility to the community to help young people learn how to relate to children in a constructive way. In many cases, students who once attended the center are now part of an extended alumni family willing to support and promote internship opportunities for current WLC students.

Employers support the school in many ways. Bill Haight, publisher of Madison's *In Business* Monthly, is a particularly strong advocate for the center—not because he was a student there, but because of a friend whose daughter benefitted greatly from the program. "Someone from the school invited me to get involved. I remembered I had a friend whose daughter went to the school. The experience turned her around," Haight said. "When you think of what the alternative would have been, it's even more impressive."

To assist the school, Mr. Haight has spearheaded several activities, including a survey of area businesses to identify organizations willing to provide various types of support and/or job shadowing or internship activities. He is a firm believer that, if asked, businesses would gladly provide opportunities for students because it is their civic responsibility to do so. The teachers from the center spend their summers identifying and developing internship sites with employers who recognize the need to give WLC students a second chance at developing a productive future.

The employer community supports the WLC by providing work-based learning opportunities, by visiting the school to talk about careers and the behavioral expectations of the workplace, by acting as role models and mentors to students, and by networking with other members of the employer community on behalf of the school. In addition, employers evaluate the students, twice per quarter, who work for them. The results of the evaluation are discussed in a teacher conference where the student receives feedback on how to be a better employee.

Looking Ahead

The school converted to charter status in 1996. Having charter status has allowed the school a degree of flexibility not possible before. Teachers have received charter school licenses, making it possible to teach across academic subjects and allowing for greater creativity in staffing. In addition, the hours of the school day are now flexible, and more time is available for in-service activities. Because the

charter school has remained within school board policies and procedures, the district accounting system, and labor contracts, it has been able to draw from the resources of the school district. However, recent administrative changes in the district, as well as the growing movement to implement academic standards throughout the state of Wisconsin, have created a climate for change with challenging, yet exciting, implications for the WLC.

In conjunction with Madison's plans to implement performance standards and assessments, the WLC developed a grant proposal to align and improve the curriculum, instructions, and assessment to achieve consistency with the new district standards. The proposal, which was written by the director of the WLC, led to the alignment of the Center with the Accelerated Schools Project (ASP) led by Henry Levin at Stanford University. According to Levin, students-at-risk are those "who are unlikely to succeed in school as schools are currently constituted because they do not have the experience in the home, family, and community on which school success is based." The Accelerated Schools Project was identified as a potential partner in curriculum reform because of the fit between the philosophy of ASP and the WLC.

Citing two major national studies of programs designed to address the educational needs of at-risk youth, the WLC founders identified a common tendency for schools to reach out to low achieving students by virtually abandoning the teaching of complex content. Rather than following the path of least resistance through remedial instruction, it was the WLC's belief that fundamental reform of curriculum and instruction would best be achieved by curriculum enrichment and integration. This entails a fundamental shift in curriculum development, focusing on pushing the students at an accelerated pace to engage in high-level thinking. This approach was consistent with the approached used in the ASP; however, the ASP was limited to kindergarten through 8th grade. The WLC has now joined with ASP, accepting the challenge to design a complementary approach for high school students.

Summary

The Work & Learn Center utilizes a theory-based approach to working with at-risk youth by placing a strong emphasis on the social and psychological needs of students. The employer community supports the WLC by providing work-based learning opportunities, by visiting the school to talk about careers and the behavioral expectations of the workplace, by acting as role models and mentors to students, and by networking with other members of the employer community on behalf of the school. Community placements are intended to help students develop employability skills with a secondary emphasis placed on specific job-related certifications.

Students realize that they are missing out on some of the social activities and academic opportunities they would have if they were attending a traditional high school, but they recognize that the traditional learning environment made it impossible for them to succeed. The Center developed a program with the right combination of structure, caring,

and compassion that provided these students with an environment in which they could realize their goals and become productive members of society.

The U.S. Department of Education has played a constructive role in stimulating research and development in the charter school area. Their role in this project is very consistent with this role. This project has been funded at least in part with Federal funds from the U.S. Department of Education under contract number SB 97023001. The content of this publication does not necessarily reflect the views of policies of the U.S. Department of Education nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.

Case Study

The Charter School of Wilmington

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(302) 651-2727
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Case Study: Delaware

"I believe the biggest obstacle to educational improvement is trust. When you increase the level of trust between all parties, the conversation between business and education becomes more profitable. Trust allows us to work together on a matter that is in all of our best interests—a good educational system."

-Ronald R. Russo, President, Charter School of Wilmington

Overview

An effective education system can only be built on a foundation of trust. Unfortunately, many parents have become skeptical of the public education system. In Delaware, approximately 20% of students attend non-public schools—the highest in the nation. Even the business community is losing faith, having supported a stream of reform efforts with little or no real impact. However, the situation may be changing as a result of an innovative effort called The Charter School of Wilmington, which is redefining the delivery of education services in Delaware.

The district school superintendent approached the DuPont Company in 1995, one of the largest employers in the state, to help support and assist with the financing of the math and science academy. DuPont felt that helping develop schools that allowed business to have a voice in the management of the school was a better solution than providing unrestricted funds.

In the interest of better public education, DuPont preceded to help Delaware's General Assembly pass the "Charter School Act of 1995." This legislation opened the door for the creation of independently operated public schools—schools that could specialize in different models of public education and allow for innovative ways to manage schools.

The Charter School of Wilmington was born out of this innovative license. DuPont took the lead in creating the school, which is located only a short distance from DuPont's facilities in Wilmington. A consortium of six local companies—DuPont, Bell Atlantic, Delmarva Power, Hercules Incorporated, Medical Center of Delaware, and Zeneca, Inc.—together with parents, teachers, and community leaders organized the independently operated public school from the remains of the Science and Math Academy. The Charter School of Wilmington, known locally as "Charter," was born.

Program Philosophy

The goals of the school are best summed up in the school motto "Expect the Best." Much sooner than predicted, this ambitious declaration has become a reality. The progress made since the school's inception is a success story that has exceeded nearly all expectations.

"Customer" interest may be the most significant indicator of success. In its third year of operation, enrollment for 1998-99 had grown to 552 students, and expected enrollment for next year is 680 students.

According to the California Achievement Test administered at the beginning and end of the school year, Charter students scored significantly higher than other students across the nation, and there was improvement in almost all areas during the course of the school year.

The Charter School of Wilmington's mission is to prepare students for a changing and highly competitive world with a rigorous curriculum emphasizing the study of mathematics and science. The founders of the school believe that one of the most important gifts they can give their children is an education that prepares them for today's world as well as tomorrow's. They feel the world needs people to be technologically adept and capable of making well-reasoned decisions. Businesses depend on these highly skilled yet flexible employees to help ensure success in an increasingly competitive market. Many jobs that once required basic skills may now require analytical and quantitative skills and the ability to reason and solve problems. Jobs that once required a high school education now require at least two years of higher education or technical training.

As major community employers, the consortium of businesses who started and help govern the Charter School of Wilmington sees a rapidly increasing need for men and women who are well grounded in mathematics, science, and technology and who have a well-developed, lifelong interest in the humanities.

Program Description

Charter combines an integrated, innovative, and rigorous math/science curriculum with a solid grounding in traditional subjects such as English and social studies. Charter offers a college-preparatory academic program that requires a minimum of 24 credits for graduation. Eight of those credits must come from required math and science courses, while two or more must come from math/science electives and computer science—for a total of at least ten courses. Charter's goal is to have 100% of its students attend college.

Students are not intentionally screened out of Charter based on their performance at previous schools. However, the high academic standards create a natural selection process. Placement tests are given to all students before they are accepted to Charter in order to place them in the appropriate phase. Each academic class has three phases that determine the pace and level at which the students are taught. These phases, or "groupings," allow students to be placed in classes that will stimulate and challenge without overwhelming. The flexibility of the phasing system allows students to be placed in different phases for different subjects and to move up or down as needed.

Case Study: Delaware

Charter offers one of the state's broadest selections of Advanced Placement (AP) courses. Through the AP program, many top student achievers are able to earn college credits while in high school. In addition to the traditional math and science courses, the school offers an extensive array of elective courses such as Astronomy, Microbiology, Geology & Geophysics, Probability & Statistics, Discrete Math, Computer Programming in Pascal, Computer Programming in C++, Computer-Aided Design/Robotics, and more. Charter students may also choose elective courses in music, drama, and art.

Computer instruction is an integral part of the curriculum. The school has fully equipped computer labs, as well as computers with Internet access in every classroom. Thanks to a federal grant funded through Goals 2000, applied technology is used to improve students' understanding of basic and complex concepts.

Charles Biehl's Integrated Math Class uses the technology to "bring abstract mathematical concepts to life through visual, interactive, fully animated software." Because of this new technology, concepts that could previously be explained only by using chalkboards and textbooks now can be depicted and manipulated in three dimensions.

Charter has successfully kept its math/science focus and is in the process of revamping its freshman science courses to provide a firmer foundation for the rigorous math and science expectations in later years.

Student Life

One of the most defining differences between Charter and the traditional public school system is attitude and expectations. "Attitude is everything, I want people to think they are a part of a winning team," Charter President Russo tells all stakeholders. In order to create that winning team, Russo maintains an environment that emphasizes high standards and excellence. The traditional public school system, in the view of many, strives for the lowest common denominator. Mr. Russo and the school's board of directors are more worried about those left behind rather than the majority of students. At Charter, every student is expected to do their personal best and achieve and learn as much as they are capable of learning.

Charter not only strives for academic excellence but also high behavioral standards. There is a values component to education at Charter. A dress code requires collars on all shirts and no blue jeans. The current, single biggest discipline problem is untucked shirts.

As a reporter from the Philadelphia Weekly wrote in February of 1997, "If you climb to the third floor (of the building) where the Charter School of Wilmington's students have been housed since September, and walk the halls, nothing seems typical. There are no Metallica T-shirts, no scruffy wool caps pulled down over eyes, no black lipstick, no jeans with frayed hems dragging on the floor, and no beepers. In the classrooms, there are no sleepy heads on desks

and no sullen faces; there's no aura of violence wafting through the hallways. The boys wear shirts with collars, the girls are well-groomed. In one classroom, quiet prevails as rows of students plumb the mysteries of statistics with the help of programmable calculators."

Almost 40% of the student body are members of minority groups.

"Our goal has always been to have a school population that reflects the community we serve," Russo said. "It is increasingly apparent that the community we're in reflects the diversity found in the our global community."

Charter assists those students who could be identified as being academically/behaviorally "at risk" by providing tutoring, home visits, before- and after-school assistance, conflict management guidance, and additional resources. Many students who had experienced behavioral problems in the beginning of the year had almost no behavioral problems by the final marking period. The Charter absentee rate was about half that in New Castle County public high schools, and the suspension rate was a small fraction of the state average.

Charter has created over 18 clubs and extra-curricular activities including band, a newspaper, and a student council. There are ten sports teams at the school, including football. Approximately half the student population participates in athletics. The school colors are blue and white, and several students were wearing shirts with the Charter logo on the day the case study was conducted. The 1998 senior class designed rings and attended prom at the DuPont Country Club. The idea is to tie in academics, athletics, and extra-curricular activities while putting primary emphasis on academics.

Leadership

Ronald R. Russo was handpicked for the position of President at the Charter School of Wilmington. Before he came to Charter, he ran the largest parochial school in Delaware for 18 years. Russo is a dynamic leader who emphasizes trust and empowerment. He feels part of his school's success is related to his ability to distance himself from the public school system and the politics behind education reform. The business consortium trusts his judgement and allows Russo autonomy in running the school. He trusts and empowers his staff to create a unique atmosphere of learning. He does not just listen to recommendations, he acts on them. Russo wants everyone to feel vested in the school, and that means empowering all stakeholders.

The school feels its most valuable resource is its faculty. The teachers that are chosen reflect the school's philosophy and "enthusiastically embrace" the challenge of teaching. The outstanding staff includes several college-level instructors, a winner of the Presidential Award for the Teaching of Science and Mathematics, and Delaware's English Teacher of the Year. A parent survey indicated that the faculty and staff were "the best thing about the school."

"The biggest surprise to me was that the teachers and students can be as close as they are here; it's really like a family," said Charter student Kelly Kershaw. "I never experienced that closeness in school before."

The teachers at Charter are not unionized; they are partners, not employees. Russo involves them in running the school and in interviewing potential colleagues. Teachers also fill a variety of roles including sports coaches and club leaders. The first year the school was in place, teachers were required to take student lunch, hall duties, and study hall. The second year, Russo hired three para-professionals to take care of those duties, and teachers taught an additional class.

Interestingly, the teachers at Charter are the lowest paid in the state of Delaware—receiving 95% of what public school teachers make. However, Charter teachers receive an annual bonus of between 0 and 15% of their salary based on the school's performance. The bonus is determined by an advisory board and is measured by performance in four categories: economic ("did we meet budgetary goals?"), student performance (using standardized tests), parent satisfaction surveys, and sponsor company evaluations. Everyone receives the same percentage to encourage unity and broader interest in all areas of the school. Last year, the teachers received a 10% bonus. This made them the *highest paid* teachers in the state of Delaware.

Mr. L. Charles Biehl is the Dean of Math, Science, and Technology and has spent a year creating an integrated math curriculum. He has been with the school from the beginning. When asked about his experiences at Charter, Biehl said, "I've died and gone to teacher heaven." He feels he is able to implement progressive teaching styles without adhering to standard political mandates that other schools are forced to meet. The curriculum he put in place is based on New York State's math and science standards. In Biehl's classroom, students are seated in groups of three to four. The students are challenged to see how the different branches of mathematics are interconnected, to be actively involved in learning, to use manipulatives and projects to visualize mathematical concepts, and to see the relevance of higher-thinking mathematical principles in everyday environments.

Business Involvement

There is a strong emphasis on workplace exposure at Charter. Corporate representatives, including each company's CEO, visit the school regularly to help students understand businesses' expectations and to help students focus on college and career goals.

R. Keith Elliott, CEO and President of Hercules Incorporated (one of the six sponsoring companies of the school), toured Charter as part of the school's Sponsor of the Month Program. The purpose of the program is not only to

familiarize the corporate leader with the school but also to give the students a glimpse inside corporate America.

Upperclassmen participate in a "shadowing program" during the school year. As part of this experience, students visit corporate sponsors and are matched with a mentor (a business professional or scientist, for example) who helps them see first-hand what their career field is really like. Visits to the facilities and laboratories of consortium members help students to understand the needs of employers and to relate their academic work to real-world applications.

Students also participate in internships during the summer, where they receive on-the-job experience. These experiences are not identified as school-to-work because President Russo believes that the school-to-work terminology is counterproductive to the goal of work-based and contextualized learning.

An advisory board is composed of seven business representatives, one elected parent, one elected teacher, and four community representatives. Of the four community representatives, two are at-large positions, one has an education background, and one is from the City of Wilmington.

Looking Ahead

The consortium of area firms was instrumental in beginning and shaping the school. However, the consortia is not involved in daily administration or the creation of curriculum. Although DuPont has supported the school since its creation, it also feels obligated to maintain distance. It does not want to be seen as favoring one school over another. The consortia provided seed money to begin the school and viewed the school as a start-up business.

Russo said he knew he would lose money for at least two years. The charter has reached and will soon exceed it's "break-even" point of 570 students, with growth to a self-sustaining organization in future years.

Summary

The businesses involved in creating Charter gave it instant credibility; and Russo used that credibility, and a successful marketing strategy, to attract students and donors along with a lot of publicity. He feels the business consortium sees Charter as a long-term investment in their future labor market.

Russo emphasizes the importance of marketing in creating a successful school. His newsletters are in color. Signs hanging through out the school are professionally done. New computers adorn the classroom, and new books adorn lockers. Russo has created an image of success, and now that image has carried over into academic success.

Case Study: Delaware

In order to measure student ability, standardized tests are administered to all entering students. In the first year, the median student score was in the 65th percentile. In the second year, the median score is in the 75th percentile. There are three 9th-grade Math League teams representing Charter. They are ranked 1,2, and 3 in the region, and the upperclass team is ranked first. One student was a semi-finalist for the Westinghouse Science Talent Search. Charter won 74 medals at the Delaware Senior High Science Olympiad.

"The success of Charter has very little to do with what we are doing—same text, same programs," Russo said. "What is different is how it operates. We can do more and better things."

Russo feels education is a multi-billion dollar business. There is a special relationship between a teacher and a student, just as there is between a doctor and a patient. Russo believes it is possible to apply business practices to education and not compromise the integrity of that relationship. Charter school legislation will not permit mediocrity. The legislation creates a system that allows successful schools to flourish and unsuccessful schools to close. Systemic change is necessary. Charters are a catalyst but not the only piece of the formula.

Russo sees the true value of the charter school movement as the elimination of rules, regulations, and power structures. In the case of the Charter School of Wilmington, the school board, which was traditionally concerned with all details of a school, was replaced with a business board that is concerned with the bottom line. The success of Charter lies in managing nuts and bolts of business without worrying about the politics and regulations.

The U.S. Department of Education has played a constructive role in stimulating research and development in the charter school area. Their role in this project is very consistent with this role. This project has been funded at least in part with Federal funds from the U.S. Department of Education under contract number SB 97023001. The content of this publication does not necessarily reflect the views of policies of the U.S. Department of Education nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.

Case Study

The Academy for Plastics Manufacturing Technology

499 Rangė Road
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July 1999

This booklet is one in a series of case study reports on employer-linked charter schools. An employer-linked charter school is a special type of public charter school in which an employer organization or network joins with educational entrepreneurs in a collaborative partnership to develop and operate a workworld-informed educational program. Because charter schools are exempt from many regulations governing traditional public schools, they have more freedom to develop innovative educational programs. In exchange for this flexibility, charter schools are held accountable for student performance.

Currently, there are over 100 employer-linked charter schools in operation across the country. The way these schools focus the engagement with employers and other community institutions ranges widely—from very focused career preparation, to those that incorporate modest exposure to jobs, careers, and employers. Some schools target industry-specific competencies and careers. Others focus on equally powerful and dynamic uses of employer worksites—providing life and work roles and tasks to enrich academic learning, build life skills, and provide rich and nurturing environments for mainstream and troubled youth alike. The schools profiled in this series are led by some of the brightest and most dynamic educators and business leaders in America. Despite the many challenges involved in moving from a vision of schooling to actual operating reality, the leaders of these schools are succeeding in making a new form of education available to a diverse population of students in urban, suburban, and rural communities across the nation.

The school described in this booklet provides one illustration of how charter schools have developed their learning program with a strong and specific use of employer partners. Other equally compelling examples are included in this series, which covers the following schools:

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Affiliated Alternatives Work & Learn Center, Madison, Wisconsin
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East Bay Conservation Corps Charter School, Oakland, California
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"They treat you like an adult. They focus on the skills you really need. The group work here is real."

-Academy student

Overview

The plastics injection and mold-making industry has a large number of firms concentrated in the Port Huron/St. Clair County area of Southeast Michigan. Many small- and medium-size companies here make plastic parts and molds for auto and auto-related industries in Michigan. These firms had a history of abortive and not altogether successful efforts to partner with local schools, the region's vocational center, and the community college to develop a skilled training program for new workers.

Area firms were facing continuing challenges attracting and keeping skilled, entry-level workers. They knew they needed to change the image of their industry and acquaint people with the new, clean, high-technology workplace. By the mid 1990s, the success of area firms, coupled with their inability to attract and keep new, entry-level workers, brought together the heads of several area firms. This gathering was led by Blue Water Plastics, and the object was to discuss common needs. These industry leaders hoped to find answers to the following kinds of questions: Couldn't we do something more to attract area young people to jobs in our firms? How can we better prepare them for these jobs? Can't we do better than the well-intentioned but unstructured school-to-work efforts underway in the community?

By this time, Michigan's charter school law had taken effect and presented the opportunity for schools, colleges, and Michigan's intermediate school districts (regional school districts providing services to the local districts like special educational and vocational programming) to operate charter schools. The state had sweetened the pot by creating special financial incentives for the development of trade academies (high school-level charter schools) to encourage charter school programs that would meet the job and occupational needs of Michigan's burgeoning economy.

The group of plastics-industry CEOs approached the superintendent of the St. Clair County Intermediate School District (ISD), which operates the county's vocational center. "Can't we create a program that we, in business, design and help deliver, that gets our area's young people into jobs in our industry?" they asked. "How about a charter school?" was the superintendent's response.

Thus, the Academy for Plastics Manufacturing Technology was born. After doing a little homework on charter schools, the nucleus of leaders from the area firms became attracted to the idea of being the governing group of a charter school that would operate as a special program at the regional career center.

"As the governing group, we can set the agenda and the direction for the school," said Carl Hass, a Plastics Academy board member. "We can drive the development of the curriculum. We can provide the internships and exposure to the workplace needed."

Program Philosophy

The energy unleashed by the firms' collective ownership of the program has resulted in real commitments of time, materials, and the precious commodity of workplace learning opportunities for the 127 students that were enrolled in the 1998-99 academic year. Nearly 188 students are slated for enrollment for the fall of 1999. The employers' excitement about their creation is palpable.

The education leadership at the Intermediate School District had their own reasons for wanting to embed a charter school within an existing vocational institution. They wanted to make some much-needed changes in the way they approached vocational education.

"We knew we weren't teaching what kids needed to know in the workplace. We knew our advisory boards weren't really working," said Joseph Caimi, Superintendent of the Intermediate School District. "We knew we wanted to break out of the mold of traditional vocational education—the way we teach it, staff it, and manage it. The charter school gave us the freedom to change."

The Academy for Plastics Manufacturing Technology that resulted is a unique institution fashioned to meet the needs of employer, educator, parent, and student partners. The county Intermediate School District's TEC (Technical Education Center) essentially operates the program as a unique offering among its dozen or so occupational offerings. To the parents and students, the fact that it is a charter school is transparent; it is marketed and billed as an attractive, high-end program offered to all area high schoolers during their last two years. The program clearly has a strong and unique identity, with employer representatives active in recruiting students. Its own logo, T-shirts, and pledges of paid internships in area firms underscore the fact that, while it is still a TEC program, it is a special one.

The academy's uniqueness emphasizes the fact that the employers wanted something they could direct more actively. Superintendent Caimi said the district wanted something better than what they were seeing with school-to-work—without the huge headaches of creating a wholly new school, with new buildings, financing, etc.

"We talked with the employers about creating a nonprofit or new entity to run the program. But, ultimately, we decided on a charter school, where the board makes the decisions but contracts with us for administration, business, and data services." Superintendent Caimi said.

While Michigan law allows charter schools $5,800 per pupil they enroll, the Plastics Academy chose not to pursue the per-pupil allotment. "I did not want our area's school districts to view the Academy as competition. I wanted it to be a unique opportunity students could select and the way we change our programming to meet employer needs and better prepare kids," Caimi said.

Funding for the academy comes from the regular vocational educational millage that assigns partial dollars to pupils who go to the TEC for their half-day programming and extra vocational money for high-demand programs.

The first-enrolled students are now about to graduate. Their experience has been overwhelmingly positive. Twenty-three second year of students have now completed paid summer internships. Growing pains are evident, but many have been surmounted.

The change in personnel rules afforded by the charter school has been the most challenging aspect of change. Staff hired to teach the program are outside the collective bargaining unit of the other TEC staff. They are expected to, and hired to, work all year, participate in more professional development activities, and generally perform under different expectations than members of the IEA (Intermediate Education Association/Michigan Education Association). These expectations are more in line with the pace, decision making, and culture of the firms Academy staff work with. The union sued the school district, charging the charter school was an effort to replace the existing contract and programs, but an administrative law judge has submitted a decision to dismiss all charges against the ISD. Business partners and students are charged up and excited about the program.

Program Description

The Plastics Academy grew directly out of the intense desire of area firms to cultivate their future workforce from the ranks of area young people. The St. Clair ISD and the TEC were eager to use the charter school mechanism as a way to tailor a program to meet employer needs and better serve students.

Unlike most charter schools, the academy is a half-day affair, with paid work extending the day for many participating students. Developing the academy as a program at the Tech Center, where blocks of multi-hour classroom and lab instruction were developed for the students, was a mutually derived decision.

"We did not want to teach everything to the students—their math, English, and social studies. Nor did we want the kids to give up the experience of being part of regular high school," said Cyndi Eschenburg, Human Resources Assistant Director at Blue Water Plastics. "We wanted to expose (the students) to our industry and teach them skills that would allow them to enter that industry in the future."

Participating firms worked hard with the TEC staff to develop an industry-driven curriculum and ways students could spend the three hours at the TEC learning the skills and processes important to the plastics industry. Students spend two and one-half hour blocks at the center. This constitutes a choice of elective coursework from their home high school. They still take their academic topics required for graduation at their home school.

At the TEC academy, students do class work and lab work on plastics injection molding machines and other industry standard equipment. The initial program began with six students focusing exclusively on plastics. In the second year, the metal-machining program at the TEC and its lab were incorporated into the academy. Typically, students spend several weeks at the beginning of the semester in the classroom, learning blueprint reading, measurement, and plastics and metalworking tools and techniques. Later, they spend increasing time in the lab, making test and mock products.

There are currently four broad areas of study that a student can pursue at the academy: Plastics Injection Molding, Metalworking, Welding Technology, and Industrial Maintenance and Repair. Within each discipline, a student can embark on various career tracks, such as: management, process technology, quality assurance. In the upcoming 1999-2000 school year, the injection molding area has enrolled approximately 55 students, the metalworking 44 students (there is a wait list for this program), the welding technology 44 students (there is a wait list for this program), and the maintenance and repair 30 students (this is a new program for the upcoming year).

Academy students are graded on a combination of their attendance, performance on quizzes and assessments around substantive knowledge, and the actual performance in the manufacture of metal and plastic parts. One unified grade-point is awarded from this combination of assessments. Many students have seen their performance improve. One student said that with the hands-on approach she went from a 2.6 grade-point average up to a 3.6. Students appreciate that courses and subsequent grades gained at their home high school (that were often viewed as boring and irrelevant) have been replaced by a challenging, living, learning process.

"I did not like sitting in a boring classroom all day. I do much better here," said one academy participant. Another student reported that three "A"s at the academy raised his GPA from a 1.0 to a 3.2.

Case Study: Wichita

Two instructors lead the program, focusing on metalworking and machining respectively. Fred Stanley, Director of Career and Technical Education for the ISD, academic staff, and contracted staff from the TEC work with business and industry representatives to develop the curriculum and provide enhancements. They also arrange work-based learning, job shadowing, and co-op. Stanley's goal is to see the academic side of the program enriched with enough math and other skills so that academic credit for TEC work can be gained from the home high school. Employer partners want to expand from plastics injection molding and machining to mold making, an area of expertise among local employers.

In addition, a developing dialogue with St. Clair Community College involves articulating the Plastics Academy curriculum with an Associates Degree and other programs available at the community college. Students in the program are able now to meet competency requirements for credit in the college programs. The academy has worked with the community college to identify classes that students can take for articulation. At the end of the academic year is "Articulation Day," which involves the students meeting with community college representatives with their portfolios and test results to decide what is eligible for articulation. Normally, students articulate around four to nine credits.

As the plastics industry develops national standards and assessments and the progression of skill standards between the academy and the community college is more fully developed, Stanley sees academy graduates meeting the defined standards for entry-level work in the industry.

"We want our graduates to meet the industry's bar for performance and be positioned for continuing education in plastics and manufacturing programs," Stanley said.

The Academy for Plastics Manufacturing Technology has procured additional resources through the U.S. Department of Education's charter school program and Goals 2000 to support the professional development of the faculty and a new computer lab.

"The virtues of the charter school and the academy include that we run a year-round schedule like our member firms, and our staff can get professional development and training on an ongoing basis as part of their job," said Stanley. "For example, we are sending our instructor to Cleveland for state-of-the art training that otherwise would be impossible."

Business Involvement

The intensity of business involvement in the academy is one of its strongest and most visible attributes. Participating employers are genuinely excited about nurturing a learning program that both meets their needs and responds to their input.

Through a series of committees, the initial partnering companies worked hard and closely to organize a curriculum spelling out the modules of instruction and competencies desired and to develop a marketing and recruitment program. The initial planning process consumed hundreds of hours of both business representative and academy staff time. The industry partners spelled out the blueprint reading, statistical process control, knowledge of the properties of plastics, and team-building and problem-solving skills desired from students.

Representatives from the member firms have been very active in visiting interested students and pitching the academy's program. Wearing academy logo shirts, board members and representatives visit students in person and describe the career opportunities available in the plastics arena. They emphasize the many career paths it opens up for students, including engineering, machine maintenance, CAD, quality control, and plastics processing. Careers in management and sales are also part of the industry landscape and are pitched to students.

Participating firms provide paid summer work experience for students after their first year and part-time work during the school year for second-year students. Getting the employers to commit the 25-plus job slots for participating students has not been hard. Jim Wirth, the Human Resource Director at a local metalworking firm, has had two to three students as part of the program. He says people don't know what the jobs are that exist and that entry-level employees make $7 to $12 an hour.

"We need to get people interested in working in the industry," Wirth said. "Yes, we lose people for a dollar more an hour in Detroit: we've even lost some of our students. But even though not all young people stay with the firm, the investment is as worthwhile."

Students at the academy receive an average of 1,000 paid work hours and two years of training during their tenure. For those students who opt for the metalworking program, its graduates are earning an average of $10.49 per hour.

Framing a curriculum, building in the competency task list valued by industry, and organizing the work-based learning opportunities has been hard work. But the academy has seen an outpouring of financial and physical support from the industry. Area firms have been eager to ensure that the program and young people have access to state-of-the-art machinery and equipment. Huntsman Corporation and Van Dorn Demag donated several modern injection molding machines for student use—a donation worth more than $200,000. Other donations of training software, tools, and equipment have made the plastics program and floor area of the machine shop a working replica of modern plastics mold-making.

The benefits seen by the participating companies are long term. As Charles McGundy of partner Huntsman Corporation, put it: "We view this as an investment in the future of our industry. We want young people to be familiar with the industry; and hopefully, many may choose to stay with it." One equipment donor, Sid Rains of Van Dorn Demag, put it even more candidly by saying "Sure, we want kids who one day are going to be making decisions about what equipment to buy to know the name of our company. But, more

than that, we have a crying need for people in this industry, and we want young people to be positively exposed to the real thing."

In addition, the Rockwell Corporation recently donated equipment for the newly developed Maintenance and Repair program. Likewise, the large area injection molding firm, LDM Technologies has expressed an interest in partnering with the academy; and meetings are currently being held to establish this relationship.

Teachers and students note the tangible outpourings of corporate support, which mark the program as distinctive from other programs at the TEC.

"In most programs, we have to wait and go through lots of bureaucratic processes to get the tools and equipment we need," said Alan Devitt, the metalworking instructor. "In (the academy), if you need new tools, they appear. If you need new equipment, it's materialized."

Students in the plastics lab at the TEC learn to make actual types of products produced in industry, and they make them to industry specifications. Partner Huntsman Corporation, a supplier of raw plastic material to area firms, has to routinely make samples of their plastic product to test their conformity to plastic industry specifications. They gave the production of these samples to the academy. Students make sample runs of plastic coat hangers and lawn markers for Huntsman.

Tom Acton, CEO of Pine River Plastics and an academy board vice-president, said the partnerships that have been developed between the board and their suppliers are a unique aspect of the program.

"Our board members are the plastics industry," Acton said. "Some of our suppliers are actually having the academy students produce components that have commercial value."

Student Life

Students in the academy move around, laugh and joke in the hallways, and travel to and from their home schools with students in the other 14 TEC vocational programs. Academy students are just like other students at the center, only, perhaps, showing a little more pride of place. Their program has a bit more visibility, with a nice logo and sign hanging at the front of the center. And word of mouth has it that they are getting jobs with area employers and have access to neat equipment and tools.

Like many students who chose a vocational education path and attend the TEC, academy students were looking for an alternative to the traditional high school pattern. Many would say they take the vocational route because they can't see themselves taking six pointless classes a day.

The academy students that were interviewed were split between those who have family and relatives in the industry (and, therefore, know about the opportunities) and those whose parents were skeptical of their children choosing a career path in plastics.

"My parents want me to go to college and were skeptical about getting into the plastics program," said one student. "But now they see what I'm learning and that I'm doing well, and they're happy."

Meeting their own and parental expectations relative to college and future success is an important factor for all the students. Students generally do see college opportunities as part of the program. They are clear that there is a relationship with the community college for continuing education in the industry and opportunities for many career paths opening up. As one student put it, "I see myself becoming an engineer, and this is a good way to do it."

Sitting around a table, drinking pop, and talking, students display the normal self consciousness of 16- and 17-year-old kids. But the transformation when students take a visitor into the plastics lab is dramatic. Student Dan Preston donned a pair of safety glasses, showed the interviewers the high-tech machine he operates, the parts he makes, and talked comfortably and knowledgeably about the set-up and maintenance processes. He proudly showed the plastic coat hangers produced and the histogram record of quality tolerances he keeps and works to improve. While observing Dan later in the day at his job site after seeing him work with similar machines in the tech lab, the comfort and confidence he has with working the equipment was clear.

"Students who go through this program aren't afraid of the machines and are comfortable in the workplace," said Jim Wirth, of Vogel Industries, who employs Dan. "Our supervisors spend time with the young people and help them work through the jobs that we need doing."

Participating students at firms like Wirth's make a training agreement with their employer and are graded by the employer on a set of personal and job-task performance traits.

Students value the attention they receive, the responsibility they are given in the program, and the emphasis on attendance and professionalism. With the focus on making a product that is tangible, the students respond and work together.

"We are treated like adults and expected to behave like we would in the workplace," said one student. "The group work here is real, we actually have to get something done."

At the end-of-year awards ceremony for the TEC, Dan and some of his classmates received honors for perfect attendance, best performer, most improved, and similar accomplishments. When their names were called, "Plastics Academy" was included, just as other students were identified in the hospitality or electronics program. They fit right in.

Case Study: Wichita

Looking Ahead

The Academy for Plastics Manufacturing Technology has launched itself and successfully worked through initial growing pains. From a beginning of six students in the fall of 1996, the academy has a current enrollment of 127 juniors and seniors. Students now see more organization and order. They also see the delivery of the promised "goodies" that, in part, encouraged their enrollments—paid work in the industry and the opportunity for future growth.

Participating employers are excited and continue to contribute time, equipment, and worksite learning opportunities. They are eager to see how initial graduates, now emerging, will fare in the workplace and where they will end up. The ultimate test of the academy's success lies ahead.

"My test is several fold. Will we keep these young people in the industry past the initial 60 to 90 days? Will they continue on an upward career path with the company and be the kind of promote-able workers we think they will be? That's the test for us," said one employer.

The academy faces other challenges in the near future. Hiring and keeping staff is a major concern of the board and the administrator of the academy. The current instructors may or may not continue with the program. Academic instructors are still adjusting to the year-round, business-style schedule and work rules. The academy is looking for the right mix of an entrepreneurial educator with real industrial experience to help lead the program.

Fully integrating the machining and plastics program into a coherent whole, while, perhaps, incorporating mold making and new occupational standards and assessments is a continuing challenge. The employers picture an integrated plastics program that incorporates machining, injection molding, maintenance, and mold making. The program is not nearly so neatly put together yet. The two major strands, plastics and machining, are running in parallel fashion.

Major political and developmental challenges lie ahead. The county school district is counting on the academy's success to encourage acceptance of charter schools as a model for innovative educational delivery in other, existing, vocational programs. The ability to press further and the pace of change that the current TEC staff and structure can absorb are open questions.

If the test for success is the satisfaction and excitement of students and employers, than the academy is performing very well. Continuing to keep this intense relationship going—and delivering a quality, relevant, education to young people that helps them find their way to area employers—is the continuing challenge of the Academy for Plastics Manufacturing Technology.

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Palisades Charter High School

15777 Bowdoin St.
Pacific Palisades, CA 90272
July 1999

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"Turning around a large, inner-city high school like ours is like redesigning a 747 in mid-flight."

-Merle Price, Principal of Palisades Charter High School

Overview

In 1993, Palisades High School was struggling. Enrollment had declined to an all-time low of 1500 students. Teachers and staff were laid off, leaving a demoralized, depressed atmosphere. Students responded to this atmosphere of lowered expectations by vandalizing homes and businesses in the local community and scoring the lowest grades in classes and on standardized tests in the school's history. In order to remain open, Palisades had to increase student enrollment. But that could only be done by transforming Palisades High School into a school where teachers and students were motivated to achieve. Since changing to charter school status in 1993, the school has changed dramatically. The story of its creation is unique and compelling and clearly mirrors its overall philosophy.

Program Philosophy

Palisades district administrators had made efforts to address the school's decline previously. In 1988, they began site-based management committees. These committees were aimed at turning over more administrative decision making to the school. They allowed the school to hire teachers directly, rather than receiving referrals from the district, and to make small management decisions without district approval. Shortly thereafter, the Los Angeles Unified School District began the "LEARN" initiative, which offers schools incentive monies for pupil attendance rates and standardized test scores and provides limited autonomy in spending and curriculum decisions. However, these reforms did not allow the school to achieve many of its goals. There was still no substantial growth in student enrollment, standardized test scores did not improve, and the school still lacked a sense of purpose and community.

In response, a meeting of parents, local business representatives, faculty, staff, and students was called. This group became the Palisades Charter High School Governance Council. This council decided that the way to motivate students to achieve, and to bring quality faculty back to Palisades, was to create a mission and belief statement. By creating a vision, supporters of Palisades High School were able to give direction, meaning, and purpose to their previously depressed school. This mission, upon which the charter is based, reads as follows:

> *The mission of Palisades Charter High School is to educate our diverse student body by developing their skills and talents to help them make a*

positive contribution to our global society. We have a vision of all stakeholders working collaboratively, displaying values of self discipline, responsibility, and respect for diversity in a school community that features a dynamic interdisciplinary curriculum, opportunities for "real world" involvement, and the use of advanced technologies. We believe that all students need to feel that they are valued, can develop academic skills, choose post-secondary pathways, develop individual and social responsibility, and that students, faculty, staff, parents, and community will work together to resolve all problems.

This group of stakeholders believed that by adopting the recently passed charter legislation they would be able to accomplish their mission without many of the bureaucratic hurdles that previously prevented change and creativity in the best interest of students. School principal, Merle Price, gave an example of how the charter has helped to ease implementation of innovative programs. For those schools lacking a charter in California, in order to change classroom curricula, teachers have to create a sample course, submit it to the state board of education for approval, and then teach the course. With chartering, teachers can alter courses in innovative ways as long as they can demonstrate student achievement. Teachers and administrators are thus able to think and act outside the box.

The articulation of a clear mission—accompanied by student and teacher accountability measures and the ability to use innovative methods to achieve the mission and goals—has allowed Palisades to become a large, well-maintained, high school with a sense of community and a spirit of optimism. And Principal Price has more than achieved one of his primary goals—increased student enrollment. The high school now enrolls 2,500 students and employs 100 teachers. In 1998, they enjoyed a 500-student waiting list. The charter school has doubled in enrollment each year since its charter in 1993, when it had only 240 students.

Palisades has changed to a place where pride is evident. As you walk through the grounds, you see pep-rally banners, class-election posters, students with class t-shirts, and a new baseball field donated by local merchants. Students are active in school affairs, and their enthusiasm is heard in passing conversations about student elections, the film they're producing for class, and the upcoming school play.

Program Description

The school's charter, which was approved by the Los Angeles Unified School District (LAUSD) in 1993, was intended to provide opportunities for teachers, parents, pupils, and community members to use innovative methods to improve pupil learning. Student learning was articulated in the LAUSD's Learning Standards in Science, Mathematics, Language Arts, History/Social Science, Health Education, and Visual and Performing Arts. Students are required to develop technological competencies and demonstrate, through their behavior and community service, specific key values including a sense of responsibility, respect for others,

honesty, non-violent participation in society, concern for the planet and the survival of all life, and a concern for the equality and freedom of all peoples.

Palisades can be classified as a "conversion school" because it was first a public high school. Though Palisades has seen dramatic improvements as a result of the charter, it has not been a simple process. Because the school is still subject to LAUSD Board of Education approval on most administrative and budgetary decisions, there are still hurdles to overcome when implementing any new program. Price has found teachers and staff very receptive to the charter, but he has faced several challenges. Those have included altering teachers' perspectives and teaching styles, empowering teachers to think in an innovative manner, and encouraging teachers to generate partnerships with other teachers and community members (especially businesses and parents). Teachers are motivated; but one of the unique difficulties of a conversion charter school, like Palisades, is empowering teachers to think in new ways and giving them permission to change as they see fit.

All students are required to complete coursework that fulfills the entrance requirements to all the University of California Colleges. Graduation requirements include four years of English, two years of math, one year of a life science, one year of a physical science, two years of physical education, one semester of health, three years of social studies, and one year of fine art or a foreign language. A total of 220 credits must be completed, along with satisfactory grades on Sharp, Topics, WRITE-Sample, and WRITE-language objective competency tests. These academic graduation requirements are slightly higher than for the other Los Angeles Unified Schools. A major difference in curriculum is that Palisades students are required to complete a community service/service-learning experience each year, have no more than 20 absences per school year, and complete a visual and performing arts, as well as a technology requirement.

Math, Science, and Technology Magnet

Palisades consists of several interrelated parts. Seventy-five percent of the Palisades students are enrolled in the Math, Science, and Technology Magnet. Dr. Ullah, the Coordinator of the magnet portion of the school, reported that 92% of Palisades graduates go directly to college. This is remarkably high when compared to the average college attendance rates among students in the Los Angeles Unified School District. Though students are not tracked, 600 students took Advanced Placement Exams last year, up from 150 two years ago. It is interesting that Dr. Ullah reported that students are not grouped according to ability level, as this is the practice in many schools; therefore, the AP placement courses may serve as a type of grouping.

Students are required to complete three specialized classes to graduate with magnet endorsement. These students attend most of the same classes as other students, and non-magnet students may attend one or more magnet classes. The magnet school was initially funded by a $10 million grant from the Department of Defense. Ex-officers with the Department of Defense volunteered as teachers

when the magnet first opened, and several are employed in one of the five magnets in the district.

New Media Academy

Another component of the school is the New Media Academy. The Academy is a partnership venture begun by Workforce L.A., the Alliance of Motion Picture and Television Producers, and the LAUSD. The program, implemented in five schools across the district, is intended to foster the creativity and invention that students need in order to pose and solve problems through video production technology and the new animation lab. A team of teachers work together to coordinate curriculum and develop projects where students learn subject matter through application. Students are mentored and can qualify for internships in the entertainment industry in their junior and senior years.

The media classroom was seen to be alive with excitement as students worked with the teacher to develop a movie script. The students not only write scripts, but also act, direct, create props, film, edit the film, and produce motion pictures. Each student is required to participate in every aspect of film making before graduation. The academy boasts donated 486 and Pentium computers with a T-1 and ISDN Internet connections. Film editing equipment was donated by Steven Spielberg. A DreamWorks (Spielberg's production company) employee comes by the academy weekly to mentor and advise students on their filmmaking.

Additional Programs

Other innovative programs at Palisades include the Humanitas Program in which art, history, and literature teachers integrate their instruction around a central theme, actively involving each student in a learning process that teaches them to think more broadly. The Integrate Mathematics Program is designed to help students explore and solve mathematical problems in the areas of algebra, geometry, logic, probability, statistics, discrete math, and functions. Students are taught to think critically and communicate ideas clearly.

Relationship to School District

School funding, other than donations booster club funds and money awarded from foundations, all flow through the Los Angeles School district local school board. Palisades' has benefitted from additional private and foundation income including support from the Annenberg Foundation ($220,000 annually), the National Science Foundation ($20,000), the Kirk Douglas Foundation ($12,500), DreamWorks ($10,000), the UCLA Collaborative ($6,000), MESA, and Hewlett-Packard ($4,000).

In 1993, the Palisades High School became chartered, along with three elementary schools that "feed" into the high school. In 1995, all five district elementary schools and the middle school were made part of one common charter.

All eight schools operate under Palisades' charter. However, each school enjoys a moderate amount of autonomy. A district coordinating council plans the annual calendar and administers grants. There are 20 members—six parents, ten

teachers, two students, a member of the classified staff, and either the principal or assistant principal. Though this group primarily focuses on instructional issues, they invite business representative when business involvement is under discussion.

There is also a "continuation" school, which was described as an alternative high school for those not achieving at Palisades Charter High School. Students typically attend the continuation school for only a short time (several weeks on average) when they are facing emotional, behavioral, or academic problems. The school has five teachers and is housed on the same grounds as Palisades Charter High School.

The latest "battle" with the charter's governing and funding entities is over the state's desire to eliminate the eight pupil-free days that teachers and administrators had used for planning time. The state legislature would like to make these instruction days. School personnel state that they will be unable to plan many of the current activities without these days. This problem illustrates that this particular charter school is still very much subject to local and state regulations and impositions. Palisades Charter High School might best be called a dependent charter in that it is dependent on district and state monies.

Student Life

There are no GPA or test score requirements for admission to the school. The students have to sign a contract in which they commit to no more than 20 absences per year, acknowledge that they can be expelled for behavior violations, promise to complete a service–learning experience each year, complete a visual and performing arts and technology requirement, and attend required orientation meetings.

As part of the LAUSD, Palisades Charter High School admits students from 112 zip codes throughout the greater Los Angeles area. Eight hundred enrolled students reside in the local community, while the remaining 1,700 live in the greater LAUSD. Anglo and Asian American students comprise 50% of the school's population, African American 30%, and Latino 20%. Thirty percent of students register for free or reduced lunch. However, informants from the parent involvement committee report that 65% of the students live in low-income neighborhoods where they would qualify for reduced lunch, but many do not register.

With 2,400 students, Palisades is the largest charter schools in the nation. It is also extremely diverse. Students come from the full spectrum of socio-economic levels and all ethnicities. One might assume that this would make it difficult to produce any real sense of community or common mission among the student body. In other schools, such diversity might spur fighting among students. At Palisades, misbehavior and intolerance are not evident. Principal Price, teachers, and students reported that students perform well academically and demonstrate few behavior problems because they have chosen to attend the charter school. Because students are selected in to the school and both students and parents sign a contract guaranteeing appropriate behavior, the students feel a sense of

community on the campus. This united community produces an environment conducive to learning.

When observing the school's leadership class, students were eager to talk about their school and why they chose it. A sophomore, who was the school's elected "Athletic Commissioner," said that when he moved to the Los Angeles area he toured various high schools and spoke with teachers and students. Palisades was the only school that he thought would challenge him academically. Students in the class also remarked that they chose Palisades because it offered a lot of extra-curricular activities, that it was ethnically diverse, that students have the opportunity to learn with children different from themselves, and that their parents chose Palisades because they believed that it offered a challenging curriculum. Though these students, as the schools leaders, were clearly selected for their enthusiasm about the school, they appeared genuinely enthusiastic about the school.

Leadership

A conversation with the teachers' union representative revealed that teachers were initially concerned that they might lose benefits or autonomy when the charter was implemented. After being part of the process, teachers have been supportive of the charter and collaborate with school officials. Teachers have, in fact, experienced greater autonomy as a result of the charter. A benefit of the charter is that teacher applicants apply directly to the school rather than the district. Teachers and administrators feel they can choose teachers who agree with their mission and purpose. The school can also hire uncertified teachers who meet other criteria, but they claim they only exercise this option on rare occasions and if an applicant is in the process of becoming certified.

Community Involvement

The Parent/Community Volunteer Program appears to be a driving force within the school. Led by Maureen Cruise, the program has attracted over 300 volunteers in the past year. Cruise reports that people are generally positive about charter schools in California, and the surrounding community is generally supportive of Palisades. She reported that people volunteer with the hope that the charter will offer students greater opportunities and a better learning environment and out of sheer curiosity. She described the school as being vision- and hope-based.

One benefit of the charter, as mentioned before, is that Palisades is free to designate administrative money to programs it chooses. A full-time volunteer had coordinated the community involvement program for several years but needed to leave to pursue a paying job. Palisades was able to offer this talented woman pay for the work she had been doing so well for years. The volunteer program has been growing and is where the greatest degree of community involvement is evidenced in the charter school.

Palisades has made a concerted effort to attract parental involvement in student education. Faculty and staff hold several orientation meetings for parents before their children enroll in the school. The various school organizations—which include Governance Council Committees, the Parent Teacher Student Association, the Booster Club, the Alumni Association, the Coordinating Council, Bilingual Advisory, and the Volunteer Program—present at these orientations so that parents learn how they can be involved.

Business Involvement

Palisades is involved with the Industry-Education Council of Los Angeles. Companies who have donated equipment and allotted staff time to volunteer with Palisades include the following:

- Apple Computer, Inc., who works on technology and curriculum integration
- The University of Southern California, who assists with the multi-media laboratory and teacher training
- IBM, who helped to integrate the Los Angeles Unified School District's Standards and Assessment Curriculum with the school's technology-use plan
- The Getty, who helps with student web page development and provides student internships
- Santa Monica Bay Keeper Company, The Malibu Foundation, and Heal the Bay, who help teach about marine advocacy and join with the environmental monitoring program
- DreamWorks, who donated computer equipment and provides technical support and assistance to the media lab
- Toyota, Nestle, Coca-Cola, Honda, Occidental Petroleum, Chevron, Towers Perrin, and Cigna International, all of who volunteer in various capacities
- UCLA graduate school of Information Science and Graduate School of Management, who are training Palisades students in technology applications and data management
- Local service clubs such as Rotary International and the Optimists, who provide tutoring and mentoring for Palisades students

Principal Price reports that over 300 volunteers from industry and the community volunteer in various capacities each month. Volunteers come to the school to teach management techniques to administrators; provide training to teachers, administrators, and students; and speak to classes. The Parent/Teacher Association organizes a speakers bureau whose members present to classes weekly.

Students are tutored by undergraduate and graduate student mentors from local colleges like California Polytechnic Institute, UCLA, Occidental College, and Marymount College. Palisades also has articulation agreements with the colleges so that high school students can take and receive credit for college courses.

The Crenshaw Satellite Learning Center, located in downtown Los Angeles, is a place where many of these activities take place. Activities take place after hours and parents and teachers meet with students and their parents. The goal of the center is to make Palisades activities accessible to local as well as distant children.

Summary

Palisades Charter High School offers a variety of educational programs that include strong links with the employer community. It is one of the largest charter schools in the nation, serving students across the full spectrum of socio-economic levels and all ethnicities. The employer community is an active partner in the school's various programs, acting as mentors to students, speaking to classes, offering internship opportunities and donating equipment and technical expertise as needed.

Case Study: California

The U.S. Department of Education has played a constructive role in stimulating research and development in the charter school area. Their role in this project is very consistent with this role. This project has been funded at least in part with Federal funds from the U.S. Department of Education under contract number SB 97023001. The content of this publication does not necessarily reflect the views of policies of the U.S. Department of Education nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.

Skills for Tomorrow High School

547 Wheeler Street North
St. Paul MN 55104
(651) 647-6000
July 1999

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Currently, there are over 100 employer-linked charter schools in operation across the country. The way these schools focus the engagement with employers and other community institutions ranges widely—from very focused career preparation, to those that incorporate modest exposure to jobs, careers, and employers. Some schools target industry-specific competencies and careers. Others focus on equally powerful and dynamic uses of employer worksites—providing life and work roles and tasks to enrich academic learning, build life skills, and provide rich and nurturing environments for mainstream and troubled youth alike. The schools profiled in this series are led by some of the brightest and most dynamic educators and business leaders in America. Despite the many challenges involved in moving from a vision of schooling to actual operating reality, the leaders of these schools are succeeding in making a new form of education available to a diverse population of students in urban, suburban, and rural communities across the nation.

The school described in this booklet provides one illustration of how charter schools have developed their learning program with a strong and specific use of employer partners. Other equally compelling examples are included in this series, which covers the following schools:

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Palisades Charter High School, Pacific Palisades, California
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Case Study: Minnesota

One size does not fit all.

-Tess Tiernan, Executive Director

Overview

The Skills for Tomorrow High School (SFTHS) characterizes itself as a community of students, parents, and staff. On the continuum of business linkages developed as part of the national Inventory of Business-Linked Charter Schools that was developed for this project, it takes a "career-focus" approach to its courses of study and linkages with employers.

SFTHS was founded by the Minnesota Teamsters Service Bureau, the Minnesota Business Partnership, and the University of Minnesota College of Education. It was chartered by the Rockford School District, a rural district outside Minneapolis, and enrolled its first students in 1994. The enrollment for the 1998-99 school year was approximately 90, up from 75 students the previous school year. The small size of the school is considered to be an important asset by the school's director, Tess Tiernan, who says that enrollment will never grow larger than 95. The school is located in an urban setting in Minneapolis, Minnesota. This physical setting reflects the commitment of the school to serve a racially and culturally diverse population.

Program Philosophy

The school is designed to meet the expectations of employers for work-ready graduates by focusing on SCANS competencies and meeting the Minnesota Graduation Rule Standards in a school-to-work context. The impetus for the school came from a representative of the Teamsters who had been actively involved in worker retraining and the requirements of the "new workplace." He worked with a professor at the University of Minnesota, who was also a member of the Rockford School Board, to develop the school.

SFTHS has a vision for itself as "a culturally respectful, outcome-based, experiential, school-to-work program for high school students through joint ventures and mutual understandings with families, the community, business, and For students in Phase III, work-site internships are a central part of their educational experience, typically structured with two days per week at school and three days in structured, field-based work settings. Placements have included an architectural firm, a hotel, a well-known software company, and a housing rehabilitation organization. Employers are encouraged to give students a broad exposure to the workplace so that they can gain a comprehensive understanding of the demands of the workplace. Part of the goal of the work-based learning is to instill in the students an understanding of leadership. This is

defined as understanding how to be both a good leader and a good follower and how to articulate these roles.

The on-the-job learning experiences reinforce the lessons that are instilled in the classroom. Students learn that it is important to understand and meet an employer's expectations, that a positive attitude and commitment are critical skills, that relationships on the job are important and require ongoing attention, and that specific skills and competencies allow for workplace success. Teachers and students report that these lessons begin to make more sense to students once they venture out into the world of work. The interns meet weekly as a group and discuss their experiences and insights. This provides an additional opportunity for the faculty to highlight the connections between the classroom and the workplace.

Throughout the process, students are encouraged to "find their passion." This entails thinking about areas of occupational interest, identifying areas of high interest, and actively pursuing career goals and interests. The SFTHS strategy has convinced teachers that they can teach life skills, how to deal with other people, and how to problem solve—all of which can enormously contribute to a student's employment and career prospects.

Teachers have said that, over time, they begin to see the workplace experiences reflected in the students' writing, both in terms of content and technique. They also report that the post-intern students have a "different air" about them and function as role models for younger students.

Students and Student Life

Students report that SFTHS differs from their previous schools in several respects. They mention smaller class sizes, teachers who teach more than one subject, more fundraising, and a focus on teamwork. They also see more opportunities for one-on-one work with their teachers, which they value highly.

Overall, students felt that they have to work harder at SFTHS but that they achieve more than at their previous schools. Some characterized their previous schools as having been deceptive about what they promise versus what they deliver. One said,"Every year I found myself promoted, not because of the work I had done but because teachers work in a system that sees bright-eyed children as dollars in the pot." By contrast, she says that at SFTHS,"I have found that reaching a goal isn't the hard part, working for it is."

Students said they viewed the school's focus on team-building as a positive element. In the racially and culturally integrated environment of the school, being an effective part of a team means dealing with stereotypes and prejudices. The school takes on such issues explicitly, encouraging students to understand "the 'isms' of the workplace" and develop strategies for succeeding despite those realities.

While students reported very high satisfaction with the school for themselves, they were equally clear that the school is not for everyone. They report that many who enroll do not stay, generally because of the rigor of the program and the high expectations regarding student behavior. One student articulated the views of many others by saying,"this is a place for people who are serious about their education." Despite this caveat, students are unanimous about recommending the school to friends.

Students aim toward the presentation of their portfolio as the major event of their final year. The portfolio is reviewed in advance by a panel of employers and other community members who prepare questions for the graduate. The presentation is typically attended by other students, friends, and family. Following a presentation by the candidate for graduation, the panel quizzes the presenter on the content. For students and faculty alike, the portfolio presentation is a profound experience in which the students tell the world who they are, what they have accomplished, and towards what they aspire. As both a test and a ritual, it serves as an important transitional point for students.

Despite its career orientation, most, if not all, SFTHS students plan to go on to college and feel that SFTHS is preparing them to achieve that goal. Many take classes for college credit while in high school. They feel that the job readiness skills they are developing will help them find jobs that could subsidize the costs of college.

The career aspirations of students vary widely, ranging from architecture to entrepreneurship to psychology. While some expected to pursue careers related to their internships, others had learned from the experiences that they did not wish to pursue a particular path. One student, who had interned at a hotel, decided that he did not want to work in a hotel, but rather wanted to own the hotel. He plans to become a real estate developer.

The ambivalence of some students regarding their employment future is not surprising. In general, some students do not decide on a college major until they have been in college for a year or two, many change majors one or more times while in college. A large number of students at SFTHS speak with clarity and insight about what they have learned about job skills and careers and how these experiences have shaped their plans. Two students have had the opportunity to work at the same job site, a Youth Build housing rehabilitation project, in which they play different roles. One is doing design work, and the other is involved in construction. They both see the connections between their work and understand the tangible value of their contributions.

Relationship to Local Education

The principal difficulty of the school has been forging a working relationship with the Minneapolis School-to-Work Partnership. In the winter 1999, SFTHS received $8,000 in funding from the School-to-Work Partnership.

The school's director, Ms. Tiernan, worries about the impact of special education rules on the school. While several students at the school had been in special education programs in their previous schools, they are mainstreamed at SFTHS. According to the director,"the problem is not providing a high-quality education to these students, it is the bureaucratic hoops that we have to jump through to satisfy the regulations." The effect of the regulations is essentially a requirement that special education students be labeled as such, a designation that the school leadership sees as destructive to the students.

Business Involvement

The Teamsters Minnesota Service Bureau, which is a 501(c)(3) affiliate of the Teamsters Union, has been a strong partner since the inception of SFTHS. The organization was deeply involved in the development of the school and has continued to provide internships, guidance, and moral support. No other partner has been as strong as the Teamsters, but several others provide internships and serve on portfolio review committees for students. For example, a large local company, Huot Manufacturing, has recently begun to provide manufacturing internships to the school's students.

Internships represent intensive engagements between the school and the employer, as well as between the employer and the student. An internship coordinator meets with supervisors and students every week to monitor progress, identify and address problems, and assure that the experience has value for the student. Employers work with the student on SCANS competencies. At the conclusion of an internship, the employer provides feedback through an exit interview with the coordinator and the student. There is little interaction between the employers and teachers other than the internship coordinator. The internship coordinator also provides guidance to the students and works with the employers to maintain a clear focus for the student's placement.

While business and community partners have been very supportive of the school, they have not been directly involved in curriculum development. The partners feel that, having had extensive participation in shaping the mission and direction of the school, they are comfortable delegating curriculum decisions to the leadership of the school.

In addition to its links with local employers, the school explicitly seeks teachers who have business experience. This attracts teachers who like the idea of a business-focused school and means that teachers can speak with authority about the requirements of the workplace.

Case Study: Minnesota

Looking Ahead

Most SFTHS graduates attend the Minneapolis Community and Technical School. Some begin course work there prior to graduation. Other schools attended by graduates include the University of St. Thomas and Metro State. The trajectory toward higher education is valued by the students and provides them with a clear path toward developing marketable skills.

The school loses many students through attrition. Out of the 90 total enrollees in 1997, for both the junior and senior year, 15 students graduated. Thus, about thirty students drop out of the program, on average each year, or 67%. Most such losses are due to the high standards for behavior and performance. While the graduates of the program are doing very well, it is not clear what happens to the others. The leadership is explicit about the fact that no one school is appropriate for all students, but they also understand that knowing the specific reasons for attrition can support an ongoing quality improvement process.

In the fall of 1998, the Skills for Tomorrow High School helped to open a junior high school for about 90 students in grades seven through nine. The Skills for Tomorrow High School partnered with the middle school, sharing their name, vision, and facility with the Skills for Tomorrow Middle School. The school is operated in partnership with Goodwill Easter Seal of Minnesota. The students of the new school have job-shadowing and career-exposure experiences. This provides better preparation for the high school program than most students receive at traditional schools. The linkage with Goodwill Easter Seal may also create new internship and service-learning opportunities for the high school students, but this has yet to crystalize. Another advantage of this development is the ability to share some faculty and staff resources between the two schools. This makes it possible to have a group of teachers and administrative personnel with more diverse experiences and skills.

Over the longer term, plans are under development for a K-6 school. This may open by the year 2000. Ultimately, the K-9 schools are intended to serve as feeders for the high school, which will provide a stable student population for the long-term. This future-looking, business-like strategy is characteristic of the entrepreneurial style that SFTHS has adopted—and is probably necessary for its ongoing survival.

The school continually seeks additional internship opportunities. Currently, the director is looking for a partner in the music industry who could provide work-based learning experiences for students in the arts. Establishing these connections is difficult and time-consuming, and maintaining them is a continual challenge.

Observations

The Skills for Tomorrow High School serves a largely urban population in a manner that exposes and links them to the concepts and realities of employment in an intensive fashion. Students learn about what specific career directions do and do not interest them; allowing them to understand what a career is all about. The high aspirations of the students demonstrate that even those who come from economically disadvantaged backgrounds can be helped to find a path toward academic, economic, and personal success. Several issues emerged from the SFTHS research that are relevant to other efforts to create and maintain employer-linked charter schools.

Career exploration: The career exploration approach taken by SFTHS exposes students to many different industries and occupations. On the other hand, the focus on any one career path is less intense than might be in a more limited setting. Business-linked charter schools must consciously choose which direction is appropriate for them and their targeted students.

Financial support: Financial issues are challenging for the school at its current enrollment level. It appears that the state funding levels are not adequate to support the current program. As a result, the school is pursuing additional funding through grants.

Regulation: Imposition of various reporting and operating requirements on what is essentially a small, one-school district has a very different impact than on the large schools and school districts. This also plays out in terms of the school's ability to participate effectively in funding consortia, such as the local school-to-work partnership. As an illustration, the need to dedicate 0.2 FTE for a funding consortia may represent 1/1000 of the staff capacity of a district with 200 employees. For a school with 20 employees, it consumes 1% of the capacity, a burden effectively ten times greater. The federal government has addressed a parallel issue in the business world with the Regulatory Flexibility Act, which requires agencies to take into account the capacities of small firms in all regulations. Perhaps a similar approach would make sense in the regulatory structure for public education.

Establishing clear expectations: The loss of students raises questions about how a school as different from the norm as SFTHS can accurately communicate its goals with applicants and their parents. It is clear that expectations for some are not aligned with the reality of the school. Business-linked charter schools may need to go beyond traditional marketing practices and try to tell potential customers who should *not* enroll. Clearly, SFTHS and others like it are not for everyone. As the director of the school pointed out, "one size does not fit all."

Setting real standards: Related to the issue of student attrition is the dilemma of how to create high standards without pushing too many students away. A teacher pointed out that "the hurdles must be real" in order for them to have meaning and that the kids must make the effort to overcome them. By focusing on the real requirements of employers, the standards for behavior, appearance, and performance are connected

competence and accomplishment appears to help students place their learning into a meaningful context. Since employer-linked charter schools are breaking new ground, it is important that they provide such a context to those who have succeeded and are about to take the next big steps in their lives. For students who come from difficult backgrounds, the deep level of engagement between them and the teachers provides a dramatically different opportunity to grow. In other schools that target at-risk students, this is an important lesson.

Skills for Tomorrow High School takes pride in doing things differently. By taking a step off the beaten path, it provides an environment and program that works well for particular students. While one size may not fit all, this size clearly fits the many who are benefitting from its approach.

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Case Study

The Charter School of Wilmington

100 North DuPont Road
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(302) 651-2727
July 1999

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Skills for Tomorrow High School, Minneapolis, Minnesota

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And available on-line at www.nab.com/education.

Case Study: Delaware

"I believe the biggest obstacle to educational improvement is trust. When you increase the level of trust between all parties, the conversation between business and education becomes more profitable. Trust allows us to work together on a matter that is in all of our best interests—a good educational system."

-Ronald R. Russo, President, Charter School of Wilmington

Overview

An effective education system can only be built on a foundation of trust. Unfortunately, many parents have become skeptical of the public education system. In Delaware, approximately 20% of students attend non-public schools—the highest in the nation. Even the business community is losing faith, having supported a stream of reform efforts with little or no real impact. However, the situation may be changing as a result of an innovative effort called The Charter School of Wilmington, which is redefining the delivery of education services in Delaware.

The district school superintendent approached the DuPont Company in 1995, one of the largest employers in the state, to help support and assist with the financing of the math and science academy. DuPont felt that helping develop schools that allowed business to have a voice in the management of the school was a better solution than providing unrestricted funds.

In the interest of better public education, DuPont preceded to help Delaware's General Assembly pass the "Charter School Act of 1995." This legislation opened the door for the creation of independently operated public schools—schools that could specialize in different models of public education and allow for innovative ways to manage schools.

The Charter School of Wilmington was born out of this innovative license. DuPont took the lead in creating the school, which is located only a short distance from DuPont's facilities in Wilmington. A consortium of six local companies—DuPont, Bell Atlantic, Delmarva Power, Hercules Incorporated, Medical Center of Delaware, and Zeneca, Inc.—together with parents, teachers, and community leaders organized the independently operated public school from the remains of the Science and Math Academy. The Charter School of Wilmington, known locally as "Charter," was born.

Program Philosophy

The goals of the school are best summed up in the school motto "Expect the Best." Much sooner than predicted, this ambitious declaration has become a reality. The progress made since the school's inception is a success story that has exceeded nearly all expectations.

"Customer" interest may be the most significant indicator of success. In its third year of operation, enrollment for 1998-99 had grown to 552 students, and expected enrollment for next year is 680 students.

According to the California Achievement Test administered at the beginning and end of the school year, Charter students scored significantly higher than other students across the nation, and there was improvement in almost all areas during the course of the school year.

The Charter School of Wilmington's mission is to prepare students for a changing and highly competitive world with a rigorous curriculum emphasizing the study of mathematics and science. The founders of the school believe that one of the most important gifts they can give their children is an education that prepares them for today's world as well as tomorrow's. They feel the world needs people to be technologically adept and capable of making well-reasoned decisions. Businesses depend on these highly skilled yet flexible employees to help ensure success in an increasingly competitive market. Many jobs that once required basic skills may now require analytical and quantitative skills and the ability to reason and solve problems. Jobs that once required a high school education now require at least two years of higher education or technical training.

As major community employers, the consortium of businesses who started and help govern the Charter School of Wilmington sees a rapidly increasing need for men and women who are well grounded in mathematics, science, and technology and who have a well-developed, lifelong interest in the humanities.

Program Description

Charter combines an integrated, innovative, and rigorous math/science curriculum with a solid grounding in traditional subjects such as English and social studies. Charter offers a college-preparatory academic program that requires a minimum of 24 credits for graduation. Eight of those credits must come from required math and science courses, while two or more must come from math/science electives and computer science—for a total of at least ten courses. Charter's goal is to have 100% of its students attend college.

Students are not intentionally screened out of Charter based on their performance at previous schools. However, the high academic standards create a natural selection process. Placement tests are given to all students before they are accepted to Charter in order to place them in the appropriate phase. Each academic class has three phases that determine the pace and level at which the students are taught. These phases, or "groupings," allow students to be placed in classes that will stimulate and challenge without overwhelming. The flexibility of the phasing system allows students to be placed in different phases for different subjects and to move up or down as needed.

Case Study: Delaware

Charter offers one of the state's broadest selections of Advanced Placement (AP) courses. Through the AP program, many top student achievers are able to earn college credits while in high school. In addition to the traditional math and science courses, the school offers an extensive array of elective courses such as Astronomy, Microbiology, Geology & Geophysics, Probability & Statistics, Discrete Math, Computer Programming in Pascal, Computer Programming in C++, Computer-Aided Design/Robotics, and more. Charter students may also choose elective courses in music, drama, and art.

Computer instruction is an integral part of the curriculum. The school has fully equipped computer labs, as well as computers with Internet access in every classroom. Thanks to a federal grant funded through Goals 2000, applied technology is used to improve students' understanding of basic and complex concepts.

Charles Biehl's Integrated Math Class uses the technology to "bring abstract mathematical concepts to life through visual, interactive, fully animated software." Because of this new technology, concepts that could previously be explained only by using chalkboards and textbooks now can be depicted and manipulated in three dimensions.

Charter has successfully kept its math/science focus and is in the process of revamping its freshman science courses to provide a firmer foundation for the rigorous math and science expectations in later years.

Student Life

One of the most defining differences between Charter and the traditional public school system is attitude and expectations. "Attitude is everything, I want people to think they are a part of a winning team," Charter President Russo tells all stakeholders. In order to create that winning team, Russo maintains an environment that emphasizes high standards and excellence. The traditional public school system, in the view of many, strives for the lowest common denominator. Mr. Russo and the school's board of directors are more worried about those left behind rather than the majority of students. At Charter, every student is expected to do their personal best and achieve and learn as much as they are capable of learning.

Charter not only strives for academic excellence but also high behavioral standards. There is a values component to education at Charter. A dress code requires collars on all shirts and no blue jeans. The current, single biggest discipline problem is untucked shirts.

As a reporter from the Philadelphia Weekly wrote in February of 1997, "If you climb to the third floor (of the building) where the Charter School of Wilmington's students have been housed since September, and walk the halls, nothing seems typical. There are no Metallica T-shirts, no scruffy wool caps pulled down over eyes, no black lipstick, no jeans with frayed hems dragging on the floor, and no beepers. In the classrooms, there are no sleepy heads on desks

and no sullen faces; there's no aura of violence wafting through the hallways. The boys wear shirts with collars, the girls are well-groomed. In one classroom, quiet prevails as rows of students plumb the mysteries of statistics with the help of programmable calculators."

Almost 40% of the student body are members of minority groups.

"Our goal has always been to have a school population that reflects the community we serve," Russo said. "It is increasingly apparent that the community we're in reflects the diversity found in the our global community."

Charter assists those students who could be identified as being academically/behaviorally "at risk" by providing tutoring, home visits, before- and after-school assistance, conflict management guidance, and additional resources. Many students who had experienced behavioral problems in the beginning of the year had almost no behavioral problems by the final marking period. The Charter absentee rate was about half that in New Castle County public high schools, and the suspension rate was a small fraction of the state average.

Charter has created over 18 clubs and extra-curricular activities including band, a newspaper, and a student council. There are ten sports teams at the school, including football. Approximately half the student population participates in athletics. The school colors are blue and white, and several students were wearing shirts with the Charter logo on the day the case study was conducted. The 1998 senior class designed rings and attended prom at the DuPont Country Club. The idea is to tie in academics, athletics, and extra-curricular activities while putting primary emphasis on academics.

Leadership

Ronald R. Russo was handpicked for the position of President at the Charter School of Wilmington. Before he came to Charter, he ran the largest parochial school in Delaware for 18 years. Russo is a dynamic leader who emphasizes trust and empowerment. He feels part of his school's success is related to his ability to distance himself from the public school system and the politics behind education reform. The business consortium trusts his judgement and allows Russo autonomy in running the school. He trusts and empowers his staff to create a unique atmosphere of learning. He does not just listen to recommendations, he acts on them. Russo wants everyone to feel vested in the school, and that means empowering all stakeholders.

The school feels its most valuable resource is its faculty. The teachers that are chosen reflect the school's philosophy and "enthusiastically embrace" the challenge of teaching. The outstanding staff includes several college-level instructors, a winner of the Presidential Award for the Teaching of Science and Mathematics, and Delaware's English Teacher of the Year. A parent survey indicated that the faculty and staff were "the best thing about the school."

Case Study: Delaware

"The biggest surprise to me was that the teachers and students can be as close as they are here; it's really like a family," said Charter student Kelly Kershaw. "I never experienced that closeness in school before."

The teachers at Charter are not unionized; they are partners, not employees. Russo involves them in running the school and in interviewing potential colleagues. Teachers also fill a variety of roles including sports coaches and club leaders. The first year the school was in place, teachers were required to take student lunch, hall duties, and study hall. The second year, Russo hired three para-professionals to take care of those duties, and teachers taught an additional class.

Interestingly, the teachers at Charter are the lowest paid in the state of Delaware—receiving 95% of what public school teachers make. However, Charter teachers receive an annual bonus of between 0 and 15% of their salary based on the school's performance. The bonus is determined by an advisory board and is measured by performance in four categories: economic ("did we meet budgetary goals?"), student performance (using standardized tests), parent satisfaction surveys, and sponsor company evaluations. Everyone receives the same percentage to encourage unity and broader interest in all areas of the school. Last year, the teachers received a 10% bonus. This made them the *highest paid* teachers in the state of Delaware.

Mr. L. Charles Biehl is the Dean of Math, Science, and Technology and has spent a year creating an integrated math curriculum. He has been with the school from the beginning. When asked about his experiences at Charter, Biehl said, "I've died and gone to teacher heaven." He feels he is able to implement progressive teaching styles without adhering to standard political mandates that other schools are forced to meet. The curriculum he put in place is based on New York State's math and science standards. In Biehl's classroom, students are seated in groups of three to four. The students are challenged to see how the different branches of mathematics are interconnected, to be actively involved in learning, to use manipulatives and projects to visualize mathematical concepts, and to see the relevance of higher-thinking mathematical principles in everyday environments.

Business Involvement

There is a strong emphasis on workplace exposure at Charter. Corporate representatives, including each company's CEO, visit the school regularly to help students understand businesses' expectations and to help students focus on college and career goals.

R. Keith Elliott, CEO and President of Hercules Incorporated (one of the six sponsoring companies of the school), toured Charter as part of the school's Sponsor of the Month Program. The purpose of the program is not only to

familiarize the corporate leader with the school but also to give the students a glimpse inside corporate America.

Upperclassmen participate in a "shadowing program" during the school year. As part of this experience, students visit corporate sponsors and are matched with a mentor (a business professional or scientist, for example) who helps them see first-hand what their career field is really like. Visits to the facilities and laboratories of consortium members help students to understand the needs of employers and to relate their academic work to real-world applications.

Students also participate in internships during the summer, where they receive on-the-job experience. These experiences are not identified as school-to-work because President Russo believes that the school-to-work terminology is counterproductive to the goal of work-based and contextualized learning.

An advisory board is composed of seven business representatives, one elected parent, one elected teacher, and four community representatives. Of the four community representatives, two are at-large positions, one has an education background, and one is from the City of Wilmington.

Looking Ahead

The consortium of area firms was instrumental in beginning and shaping the school. However, the consortia is not involved in daily administration or the creation of curriculum. Although DuPont has supported the school since its creation, it also feels obligated to maintain distance. It does not want to be seen as favoring one school over another. The consortia provided seed money to begin the school and viewed the school as a start-up business.

Russo said he knew he would lose money for at least two years. The charter has reached and will soon exceed it's "break-even" point of 570 students, with growth to a self-sustaining organization in future years.

Summary

The businesses involved in creating Charter gave it instant credibility; and Russo used that credibility, and a successful marketing strategy, to attract students and donors along with a lot of publicity. He feels the business consortium sees Charter as a long-term investment in their future labor market.

Russo emphasizes the importance of marketing in creating a successful school. His newsletters are in color. Signs hanging through out the school are professionally done. New computers adorn the classroom, and new books adorn lockers. Russo has created an image of success, and now that image has carried over into academic success.

In order to measure student ability, standardized tests are administered to all entering students. In the first year, the median student score was in the 65th percentile. In the second year, the median score is in the 75th percentile. There are three 9th-grade Math League teams representing Charter. They are ranked 1,2, and 3 in the region, and the upperclass team is ranked first. One student was a semi-finalist for the Westinghouse Science Talent Search. Charter won 74 medals at the Delaware Senior High Science Olympiad.

"The success of Charter has very little to do with what we are doing—same text, same programs," Russo said. "What is different is how it operates. We can do more and better things."

Russo feels education is a multi-billion dollar business. There is a special relationship between a teacher and a student, just as there is between a doctor and a patient. Russo believes it is possible to apply business practices to education and not compromise the integrity of that relationship. Charter school legislation will not permit mediocrity. The legislation creates a system that allows successful schools to flourish and unsuccessful schools to close. Systemic change is necessary. Charters are a catalyst but not the only piece of the formula.

Russo sees the true value of the charter school movement as the elimination of rules, regulations, and power structures. In the case of the Charter School of Wilmington, the school board, which was traditionally concerned with all details of a school, was replaced with a business board that is concerned with the bottom line. The success of Charter lies in managing nuts and bolts of business without worrying about the politics and regulations.

The U.S. Department of Education has played a constructive role in stimulating research and development in the charter school area. Their role in this project is very consistent with this role. This project has been funded at least in part with Federal funds from the U.S. Department of Education under contract number SB 97023001. The content of this publication does not necessarily reflect the views of policies of the U.S. Department of Education nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.

Case Study

Michigan Health Academy

Downriver Community Center
Detroit MI
July 1999

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Currently, there are over 100 employer-linked charter schools in operation across the country. The way these schools focus the engagement with employers and other community institutions ranges widely—from very focused career preparation, to those that incorporate modest exposure to jobs, careers, and employers. Some schools target industry-specific competencies and careers. Others focus on equally powerful and dynamic uses of employer worksites—providing life and work roles and tasks to enrich academic learning, build life skills, and provide rich and nurturing environments for mainstream and troubled youth alike. The schools profiled in this series are led by some of the brightest and most dynamic educators and business leaders in America. Despite the many challenges involved in moving from a vision of schooling to actual operating reality, the leaders of these schools are succeeding in making a new form of education available to a diverse population of students in urban, suburban, and rural communities across the nation.

The school described in this booklet provides one illustration of how charter schools have developed their learning program with a strong and specific use of employer partners. Other equally compelling examples are included in this series, which covers the following schools:

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Overview

The Michigan Health Academy (MHA) was founded in 1996 as a result of a collaborative partnership between Henry Ford Hospital; Oakwood Medical Center; and Synergy Training Solutions, a Michigan-based curriculum development firm. The academy, which currently is located in the same building as several of the other community service programs operated by the Downriver Community Conference, serves approximately 85 11th- and 12th-grade students drawn from several school districts in the Detroit metropolitan area.

Program Philosophy

In early 1995, the Downriver Community Conference, a community-based organization located southwest of Detroit, played a pivotal role in creating what is now an innovative charter high school in the Detroit metropolitan area. Using a charter school development grant provided by the Michigan Jobs Commission, members of the conference succeeded in bringing leaders of the Henry Ford Hospital, Oakwood Medical Center, and, later, Synergy Training Solutions together to create the Michigan Health Academy. MHA is dedicated to preparing 11th- and 12th-grade students for careers in the health care industry.

Representatives from Ford hired Synergy Training Solutions to create the curriculum outline required for the charter application that was submitted to Saginaw Valley State University for approval. Initially, the founders did not have a specific plan for implementing and managing the school. But eventually, Synergy agreed to facilitate the development process on an ongoing basis, becoming the school's management company in the fall of 1996.

MHA provides its students with a focused, career-path curriculum designed to prepare them for successful transition into health care careers. Students participate in both classroom-based instruction and work-based observations through clinical rotations at sponsoring hospitals. According to the academy's director, the sponsoring hospitals support the academy's goals but do not guaranteed employment when students complete the two-year program. However, even though graduates are not guaranteed a job, successful completion of the program requirements provides students with the certifications and skill sets necessary to compete for available positions in the health care industry.

Program Description

MHA's curriculum was designed with the active involvement of employer partners. A curriculum committee, which included hospital unit managers and department heads, helped design a program that integrates academic core

requirements with training in specific skills needed to earn a certification as a Certified Nurses Aide (CNA). According to one of the academy's teachers, the CNA training that is offered through the school is quite different from the traditional CNA program of instruction that is typically offered in many nursing homes and adult education centers. Her previous experience included teaching a 15-hour, state-mandated CNA curriculum offered through a local hospital. At the academy, that educational program is enriched considerably. Students receive additional training using the same text as that used for first year nurses and take additional course work that focuses on anatomy and physiology. Based on her previous experience with a variety of different CNA training programs, this teacher was enthusiastic about the quality of the training offered to academy students.

The curriculum incorporates academic standards, integrating content standards for math, science, and language arts into applied contexts. Early in their junior year, students begin writing a journal that documents their experiences at the academy. For example, they reflect on their initial expectations upon enrollment at the academy, the skills they develop, and the thoughts and feelings they experience as they participate in clinical rotations. Academic standards for language arts are integrated into the journal-writing process.

There is evidence to indicate that MHA students are succeeding academically. Recently, some of the students from the academy participated in a student competition run through the Health Occupation Student Association. Twenty students competed in regional competition, fifteen moved to state-level, and four made it all the way to national competitions in medical terminology spelling, medical math, and communication skills.

The MHA curriculum also includes national standards for health care. Beginning in the first year of their academic program, juniors take classes at the academy. During their senior year, students pick an area of concentration and then move between three weeks of classroom-based instruction and two weeks of clinical observation. Hospital employees act as mentors to students during these clinical experiences.

Initially, the school was designed to give each student exposure to a broad range of possible career options within the health care field. However, the operators of the school found that students seemed overwhelmed by the choices available to them. Thus, the school is currently moving toward a single mentor and single placement for students. This will permit a more intense work-based learning experience with longer exposure to a single skill set. It is the school's hope that by helping students make the connection between what is learned in their classroom and what they see in practice, that they will develop a more defined and focused career choice and will be more employable upon completion of the program.

In an effort to assist students in making a successful transition to post-secondary training and employment, the Academy has been working in close collaboration

with employer partners to place students in summer jobs. The hospital has been very supportive of this initiative, with close to 50% of students placed in full- or part-time summer jobs.

The MHA educational program is designed to reflect the patient-focused health care philosophy of the sponsoring hospitals. The patient-focused care model is an innovative approach to health care that requires employees to be cross trained to do EKGs, draw blood, handle basic respiratory care needs, etc. In other words, the idea is to move away from overspecialization. This approach suggests an expanded role for CNAs responsible for direct patient care. Students from the academy are learning to meet these new challenges.

Academy students are also taught to view health care from the perspective of the patient. For example, students learn about the care and treatment of cancer patients by focusing on the experiences of an actual patient—observing all the various health care professionals that the patient comes in contact with during his/her hospitalization and treatment. This can be a powerful experience for students as they connect with patients and their families.

The educational program for students at MHA includes a multi-faceted array of classroom-based and work-based learning experiences. The program stresses the development of technical skills, academic competencies, and written and oral communications. This puts students in a strong position to make a successful transition into the workplace or to further their education at the community college or university level.

Business Involvement

Maintaining meaningful relationships with employer partners is essential to MHA's long-term survival. Since spearheading the move to bring Henry Ford Hospital and Oakwood Medical Center together to develop an employer-linked charter high school, the Downriver Community Conference has not played an active role in the continued development and operation of the school. There have been some problems related to the mix of clients who come to the conference building (where the school is located) to access other services including Work First, JTPA, and Unemployment Insurance offices. But, despite these issues, the Conference has remained supportive of the school's goals and mission.

The employer community has been involved in virtually every facet of the school's planning and development and continues to play an active role in the academy. Both the CEO and Vice President of Human Resources of Henry Ford Hospital are members of the school's governing board and continue to provide direction to the school. In addition, the staff of the school are continually engaged with hospital staff in key departments of the hospital—monitoring student performance and making adjustments as necessary to improve the quality of the programs offered to students. For example, in order to monitor the effectiveness

of the school's curriculum, the academy sought feedback from mentors and hospital personnel to identify student strengths and weakness. This led to the development of a new "professional practices" class designed to place a stronger emphasis on career and employability skills. Because of legal liability concerns, the work-based experiences now involve students as observers in the workplace. This allows students to see how their classroom lessons are applied in an actual workplace setting.

As the school's program evolves, MHA staff anticipate the continued need to maintain an open channel of communication between the school and employers. Based on the experience to date, the director of the academy is convinced that the commitment from executives of the hospital and medical center—and their willingness to support and provide opportunities for work-based observation and summer jobs for students—have been essential ingredients in the success of the school.

Looking Ahead

Reflecting on the experiences of the first two years of operation, the MHA's director expressed satisfaction with several accomplishments. Those accomplishments include the development of an integrated curriculum, the hiring of enthusiastic and qualified teachers with prior work experience in health care settings, the successful recruitment of students, and the meaningful linkages with employers in the community. At the same time, the school has gained valuable experience in the challenges of working through the trials and tribulations of starting a school from scratch. As the MHA plans for the future, several changes are in store.

According to the school's director, recruiting students is one of the academy's biggest challenges. Many students are attracted to MHA because of the opportunity to pursue health careers, the small school environment, and the perceived safety its small size entails. In the haste to build enrollment during the first year of operation, too many students came unprepared to handle the academic demands of the curriculum. In response, the school has made a stronger effort to clearly communicate the previous academic course work expected of those wishing to enroll at the school.

The school is working to build and maintain enrollment in several ways. Taking a more aggressive approach to recruiting new students, the school plans to do mass mailings to eligible 10th graders in surrounding school districts. These efforts have begun to pay off as enrollment has increased by approximately 30%. Recognizing the difficulties inherent in persuading 10th graders to leave their home high schools and circles of friends, the school is developing a five-year plan that will expand the school to serve grades 9 through 12. Additional changes planned for the near future include articulation agreements with the local community college and Wayne State University.

Faculty recruitment and retention is also a top agenda item for MHA. According to one instructor, her interest in teaching at the school stemmed from her interest in creating a model program and the flexibility of working in a charter school environment. There has, however, been some external pressure on staff to become unionized. In the future, the school intends to recruit young teachers who they view as more receptive to charter schools, more flexible, and not referenced to traditional teaching methods and school-year schedules. A principal has recently been hired, and future plans include the addition of a guidance counselor.

Summary

The Michigan Health Academy has worked through the initial challenges of starting an employer-linked charter school. With the help and support of its employer partners, an innovative and academically challenging health care curriculum has been created. This curriculum effectively links classroom instruction with work-based learning experiences. The flexibility of the charter school arrangement has made it possible for the school to find creative solutions for staffing and for structuring the learning environment. Over time, the school has continued to evolve and change in response to the needs of the students and employers.

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Case Study

East Bay Conservation Corps Charter School

1021 Third Street
Oakland CA 94607
(510) 891-3900

July 1999

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"I didn't click with my other schools. At East Bay, I have made valuable connections with work and learning."

-Tre Vaun, student

Overview

East Bay Conservation Corps (EBCC) is using its "charter" to create new connections, connections with out-of-school youth and connections with the mainstream school system. Since 1983, the EBCC has served out-of-school young adults (i.e., students who are no longer enrolled in traditional public schools) through summer and year-round programs that educate them about the environment, give them hands-on learning opportunities, and help them learn citizenship by taking responsibility for their communities.

Experience showed the EBCC that serving out-of-school youth completely outside the system through limited academic remediation and job experience was not enough in light of today's dynamic workplace. A transition was needed from placing an emphasis on job access to stressing skills development. The EBCC began by leveraging California's charter school legislation to annually connect 4,500 youth with schools, work, and skills.

The EBCC Charter School, approved by the state in 1995, offers a comprehensive skills development and education program for young adults ages 18 - 24 in the *corps members* division of the EBCC. While working on projects in parks, schools, and on public and private lands, students under go a "psychic detox" where they learn to take responsibility for their lives. They receive the benefits of serving their communities while developing academic competencies and life skills and receiving job-readiness training.

The corps members represent the socioeconomic, racial, and cultural diversity of San Francisco's East Bay area. Seventy percent are high-school dropouts, 49% are parents, 75% are African American, 20% are Latino, and 75% are males. This population of young adults deals with social issues that surpass the typical American student. Many of the students are homeless, many have criminal records, most do not have health care services, and most have no job experience. For some, the only food they receive is the one meal given to them at the EBCC. All of the students that are involved in the corps-members program have been labeled at-risk. The average academic achievement level at entry is between a fifth- and seventh-grade level.

Because of the population they are serving, the EBCC faces the persistent challenge of urban poverty issues. Although about one third of the students have a high school diploma, some of the corps members test at a second- or third-grade level on the entry Test of Adult Basic Education (TABE). The majority of

the entering corps members are not prepared with the skills needed to obtain or maintain a job. The EBCC realizes that the workplace is changing and is demanding a comprehensive education as well as work-based skills. They also realize that "one size does not fit all," particularly with the students with whom they are working. In an attempt to create a new model, EBCC has designed one of the most comprehensive remedial and advanced education, training, and employment programs in the country.

The EBCC has been extremely successful in their approach to remedial education. Corps members experience grade level gains four times the national average, gaining two to three grades for every 50 hours of instruction. The EBCC has been a national model for service-learning education across the country. It receives several awards a year honoring the corps-members program: Project YES (Youth Engaged in Service), which provides in-class, after school, weekend, and summer service-learning programs to more than 2000 students annually in the Oakland Unified School District (OUSD), and an AmeriCorp program that serves 13 elementary schools in the Oakland area.

In addition to operating the charter school that houses the corps-members program, the EBCC has been approved to open a K-12 division of the school as well. The K-12 division will be open to grades K-5 in the fall of 2000, to grades 6-8 in 2001, and, sequentially, to grades 9-12 until 2005. The focus of the K-12 school will be on building two kinds of literacy: 1) the ability to read, write, speak, and calculate with clarity and precision and 2) the ability to participate passionately in the life of the community. The school will incorporate service learning across the curriculum and methodology.

Program Description

The EBCC designed a remedial and advanced education, training, and employment program that would meet the needs of their corps members. Traditional remediation approaches did not serve the population of students the EBCC was working with. The program had to be an open-entry/open-exit model that addressed the high attrition rates of the students, as well as the multi-cultural make-up and varying academic achievement levels of the student body.

The academic component of the program is conducted at the EBCC Learning Center two hours a night, two nights a week. The overall program is self-paced and includes individual academic skills training, career education, life skills training, and case management support. The Learning Center currently provides educational strategies to improve students' academic skills from the first grade to the GED level. In 1999, the EBCC Charter School will be able to award high school diplomas. This increases student learning requirements from a ninth-grade level for the GED to a 12.9-level for a diploma.

Case Study: California

Once a corpsmember passes the GED or achieves GED level skills, they can become involved in the EBCC's advanced student program that includes direct placement into community college classes and advanced training in leadership, computer training, and other vocational skills training. The EBCC corps members education and development programs are funded by the California State Department of Education, by a grant from the Pacific Gas and Electric Company, and by other private contributions.

Many of the corps members received a high school diploma from a previous school but still are achieving at a third-grade level and are unprepared for the workplace. The EBCC felt that a new curriculum needed to be developed—one that would define exit criteria for a diploma that would represent academic and workplace preparation. The new diploma would represent the following five competencies: academics, life skills, employability, citizenship, and communication.

According to the competency framework that guides the school's curriculum development, *Academic* competency means the mastery of academic skills and usage of those skills to understand and help shape the world. Competency of *Life Skills* means the understanding and demonstration of the basic skills needed to function daily for one's self and one's family. Competency in *Employability* means the demonstration of the ability to analyze what is needed to find a job and develop the skills needed to succeed in the workplace. Competency in *Citizenship* means the demonstration of an awareness of the relationship of the individual, society, and the environment and the usage of the awareness to enrich and protect all three. *Communication* competency means the mastery of the different forms and tools of communication and the effective usage of them.

These areas of competency allow for individual plans. Each area of competency is broken into four levels. Because of the high attrition rate, the levels allow for certificates of mastery at specific points of achievement. Depending on where a student starts and how long they stay at the school, a student could leave with a number of certificates of mastery, a GED, or, eventually, a high school diploma. Regardless of how long they stay, a student will leave with a documented academic record. This record will also document what they have done in the workplace experiences and other competencies.

Consultants with expertise in the five competencies that provide a framework for the program are being brought in to flesh out the curriculum from entry into the program to the desired levels of competency. The development of this curriculum is being funded by a state grant and private grants from foundations.

Work Experience

In addition to the academic component of the EBCC Charter School, corps members conduct 32 hours per week of contracted environmental and community improvement projects. An orientation introduces them to the fieldwork, with workshops on tool safety, conservation awareness, goal setting, and professionalism. Eventually, corps members can be certified for using heavy

machinery and tools such as forklifts, chainsaws, and weed-eaters. They can also be certified in vegetation management and landscaping, CPR, and first aid. Each corps members is paid minimum wage and can earn a ten cent raise after a positive monthly evaluation.

Crews composed of four to eight corps members are managed by a trained site supervisor. The crews work on projects to improve natural resources, promote community services, increase public access, assist with disaster relief efforts, and beautify neighborhoods and recreational lands in local counties. On the worksite, corps members learn basic work maturity skills such as punctuality, dependability, cooperation, quality of work, acceptance of supervision, initiative, and motivation. In addition, they learn transferable job skills such as tool usage, occupational safety, record keeping, and supervision. They also learn a range of technical skills including trail building, fencing, carpentry, creek restoration, painting, vegetation management, and landscaping. Individuals can be in the program for a maximum of three years. After that, they must apply for an extension. The decision to grant an extension is based on how well the corpsmember is using the program. Sponsors of the EBCC field crews include the cities of Oakland and Berkeley, the Alameda County Flood Control and Water Conservation District, the East Bay Regional Park District, and the East Bay Municipal Utility District.

The EBCC coordinates over 20 paid internships designed to expose advanced corps members to a variety of work environments and careers and to provide them with hands-on job training. A corps members must have two months of crew experience before they can apply to be an intern. Intern positions include semi-skilled labor, administration, and education services with the Alameda County Public Works Agency, local recycling programs, and within the EBCC.

The EBCC also houses a recycling program through a grant from the California Department of Conservation. The grant gives the EBCC a percentage of the bottle redemption funds. Originally, this amounted to over $2 million, but it has decreased over the years. The EBCC corps members set up and service recycling programs for over 60 local non-profits, small businesses, and residents. The recyclables are brought back to the EBCC site and are processed by participants of the Stepping Stones program (a program that employs youth with disabilities). Large recycling companies then buy the materials, and the proceeds that are generated go back into funding the program.

In addition to the fieldwork and academic experiences, the corps members also attend workshops on various topics such as parenting skills, CPR, first aid, sex education, resume writing, technology, tax preparation, housing, and interviewing skills. Once a month, the entire corpsmember program attends a "community meeting"—where individual crews present updates on their projects, general EBCC business is addressed, and awards are given out to the corps members. The agenda also includes presentations on themes such as Black History, Native Americans, Women's Month, and Earth Day.

Student Life

Students come to the EBCC for a variety of reasons. Tre Vaun, a 19-year-old high school drop out, said he was there because he "didn't click" with his other school, and he really needed a job. He thinks the EBCC can help him obtain his goals: to get his GED and his driver's license.

Laqueta, a 22-year-old mother, is hoping to get her GED as well as some good references for a future job. She said the staff at the school are very supportive and that she was getting a good education and good work experience.

Clay, age 22, explained that he almost finished high school but because of family problems never earned his diploma. He heard about the EBCC from his sister and is working to get his GED in a few short months. He feels he is learning good job skills and is hoping to get some job references. He also said that he thought of the EBCC as more of a job than as a school.

Fundisha, age 19, also dropped out of school. She really likes the one-on-one attention she gets at the EBCC and expects to receive her GED in June of 1999. She is working toward her Class B driver's license so she can drive larger vehicles such as vans and buses.

Through the job training and academic support, some of these corps members will earn their GED, a few will go on to higher education, and others will find good paying jobs. However, many of them will not. The average stay of a corps members is around six months. The personal problems and survival issues these individuals face make it very difficult for them to complete the program at the EBCC Charter School.

While they are at the EBCC charter school, these individuals become part of a team. Their fellow corps members become a family, and there is a sense of pride in belonging to a specific crew and the EBCC in general. Often, you will hear corps members chanting their crew number, and you will see EBCC sweatshirts and coats on many of the staff and corps members. The feeling of community that exists for the EBCC is grounded within the organization and is exemplified by their commitment to the overall community and environment.

The corps members can participate in activities such as ski trips, rope courses, wilderness outings, and various other field trips. They can also participate in the Corps members Council, which is a leadership group of corps-elected members. This council helps to address student concerns and organize activities for the corps members.

Leadership

The agency employs 96 staff members with a core team of 35 staff focusing solely on the corpsmember program. EBCC recognizes the unique challenges that these students face. They also recognize the fact that they have a small window of opportunity to make a difference in a corps members's life. Most of the students

won't stay long enough to complete the programs, but the staff is determined to have each student leave with some sort of achievement.

Program Philosophy

The EBCC staff, both in Youth Development/Learning Center and in the field, see their purpose as a means to expose and prepare these young adults. The staff is there not only to give academic and career training but also to teach the students to help themselves, to take responsibility for their actions, and to empower them to achieve more. Each staff member of the EBCC takes responsibility for the corps members, and they share a common desire to do what is best for each individual. The personal relationships the staff builds with the students allow them to share life experiences as well as occupational and academic skills. They want their corps members to look beyond their current situation and into the future—a future of possibilities and opportunities.

The staff, some of which are program alumni themselves, are role models for the corps members. As leaders, they must demonstrate professionalism, maturity, respect, and responsibility. The EBCC staff have to show the corps members their commitment to their individual success and the trust and faith they have in each person's potential.

Although the EBCC staff is completely committed to the mission of the Corp, there was some hesitation and reluctance when EBCC became a charter school. There was resistance for fear that the bureaucratic structure of the public education system would limit the services that they could provide. They were concerns that the corps members' needs would not be fully met. Eventually, however, they realized that the charter allowed for expansion of services and has allowed them to build strong programs. They can now offer a diploma to their students, whereas before they could only offer a GED. The school now receives Average Daily Attendance money for the services it was providing to students all along.

Business Involvement

The EBCC strives to run as a business. The EBCC receives paid contracts from public and private agencies to perform various environmental and community improvement projects. The proceeds then go back into the program for corps members income and for future program development. Foundation funding is used to support other parts of the program.

The EBCC leaders believes that if they are going to have an impact on the community and the students they serve, they have to involve all aspect of the student's lives. In order to do that, the EBCC relies on partnerships. The EBCC received broad base support and funding from public/private partnerships with land management agencies; marinas; community service organizations; federal, state,

and local government agencies; private foundations; and corporations. All of the EBCC's programs are built on extensive partnerships that work to create comprehensive programs that serve the needs of the community.

The EBCC relies heavily on the involvement of business. They currently have a Business Advisory Committee that consists of members from private businesses including UPS, Bank of America, Chevron Corporation, IBM Corporation, Port of Oakland, Schnitzer Steel Products, and East Bay Municipal Utilities District. This committee helps advise the EBCC on relevant business matters in running the Corps, shares insights into skill standards and curriculum ideas, provides learning opportunities for the students through job shadowing and mentoring, and provides resources for the school. The Business Advisory Committee will play a critical role in the future K-12 charter school in terms of spearheading business partnerships and involvement, as well as advising on school management and curriculum.

The EBCC invites employers from local businesses to come to the school and interact with the students. Last year, Leland Thompson, of retail clothing store The GAP, conducted an "Interviewing Skills" workshop. In May of 1998, a representative from a temp agency conducted a "Job Search" workshop at the school. Chevron recently gave tours of a refinery facility. IBM has conducted tours and participated in job shadowing. UPS has done job shadowing and hosted interns in their recycling program.

The theme of partnerships flows through to the governance structure of the EBCC. Governance is based on a Board of Directors. The board currently consists of educators, lawyers, representatives from the private sector, higher education representatives, and community development members. The EBCC is now in the process of creating a larger board that will expand connections with businesses.

Looking Ahead

Because of the populations the EBCC is serving, the Corps faces several unique challenges that will continue to impact them in the future. In running an organization that is both student based and client based, the EBCC staff find themselves performing a juggling act in serving both groups. Success for the students and the contracted clients depends upon the interaction between the two groups. The EBCC plans on utilizing the Business Advisory Committee and additional funding for finding ways to align these two critical components of their program.

Because the attrition rate is so high, the staff must move quickly through the materials and content. Because the biggest problem with the corps members is absenteeism, the staff is faced with the challenge of ensuring that each student gains as many skills and accomplishes as many of the academic requirements for the GED as possible during the short time they are there. Often times, corps

Plans for the K-12 charter school are commanding much of the EBCC's time these days. Locating a facility, identifying a student population, establishing partnerships, and creating a service-learning based curriculum are all in the process of being solidified. Securing funds is also a critical priority. Currently, they have raised about half of the dollars they need to develop the school's curricular framework. These funds have come from foundations and businesses.

Summary

Since its founding, the EBCC has provided education and work-based experiences for students who dropped out of the traditional public school system. By converting to charter status, the EBCC was able to connect with the public school system, access funds to support their existing education programs, and award high school diplomas.

The U.S. Department of Education has played a constructive role in stimulating research and development in the charter school area. Their role in this project is very consistent with this role. This project has been funded at least in part with Federal funds from the U.S. Department of Education under contract number SB 97023001. The content of this publication does not necessarily reflect the views of policies of the U.S. Department of Education nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.

Henry Ford Academy

Henry Ford Museum
PO Box 1148
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(313) 982-6200
July 1999

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Currently, there are over 100 employer-linked charter schools in operation across the country. The way these schools focus the engagement with employers and other community institutions ranges widely—from very focused career preparation, to those that incorporate modest exposure to jobs, careers, and employers. Some schools target industry-specific competencies and careers. Others focus on equally powerful and dynamic uses of employer worksites—providing life and work roles and tasks to enrich academic learning, build life skills, and provide rich and nurturing environments for mainstream and troubled youth alike. The schools profiled in this series are led by some of the brightest and most dynamic educators and business leaders in America. Despite the many challenges involved in moving from a vision of schooling to actual operating reality, the leaders of these schools are succeeding in making a new form of education available to a diverse population of students in urban, suburban, and rural communities across the nation.

The school described in this booklet provides one illustration of how charter schools have developed their learning program with a strong and specific use of employer partners. Other equally compelling examples are included in this series, which covers the following schools:

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And available on-line at www.nab.com/education.

"These artifacts have been saved to let people learn. If we want to be a powerful educational institution, we must be affiliated with schools."

-Steve Hamp, President Henry Ford Museum and Greenfield Village

Overview

The Henry Ford Academy is located on the grounds of the Henry Ford Museum and Greenfield Village. The school, which opened in the Fall of 1997, serves a diverse population of students from across Wayne County, Michigan (over 44 ethnic communities are represented in the region), and students at Henry Ford, who enroll through a lottery, reflect that diversity. Located within the museum itself, the school's curriculum features contextual learning experiences. The academic curriculum, which is aligned with state and national academic standards, it incorporates contextual learning opportunities involving the rich resources of lead school sponsors, the Henry Ford Museum, and the Ford Motor Company. Learning activities throughout the museum grounds and the proximity of the school to the corporate headquarters of Ford permits close interaction between adults and students.

Program Philosophy

In the early 1900s, Henry Ford, inventor and entrepreneur, envisioned a world in which automobiles would be available to the common man. His view of education was built on a set of assumptions about the role of public schools in supporting the economy of that era—men would be trained to work on assembly lines and women would be taught how to take care of domestic needs. Ford created a set of schools on the grounds of the museum as early as 1929; in 1937, the schools in the museum and Greenfield Village had nearly 300 students from kindergarten through college. The last operating schools on the site closed in 1969, although students remained the chief visitors to the museum over the years.

Obviously, times and the purposes of education have evolved and changed. The models and methods that worked in a manufacturing-based economy have been replaced by those of a new, knowledge-based economy. This economy carries with it a new set of assumptions about work and a new set of expectations about the role public schools must play in preparing the 21st century workforce. Rather than become an artifact of what public education meant in the 20th century, the Henry Ford Museum and Greenfield Village have repositioned themselves for the future as leaders in education reform.

Artifacts demonstrating the tremendous impact that technology has had on society during the 20th century—from the earliest Model-T to computer-designed sports cars, from rudimentary farm implements to complex harvesting tools—are all on

display for the more than 250,000 students who visit the Henry Ford Museum in Dearborn, Michigan each year. The museum has been successful in attracting large numbers of visitors who marvel at the scope of history laid before them.

Yet, Steve Hamp, President of the museum and Greenfield Village, wondered if this was enough. He wondered if there wasn't more that could be done to bring history alive and make this wonderful resource relevant to the community. With the active support and encouragement of Mike Flanagan, the Wayne County Intermediate School District Superintendent, Hamp and Renee Lerche, Ford Motor Company's Director of Workforce Development, are working to realize their mission of bringing together the vast resources of the Henry Ford Museum and Greenfield Village to create a model curriculum for the 21st century. Today's rebirth of a school housed on the site revisits Henry Ford's original intent and continues the tradition of developing the museum as an educational resource for the greater community.

The Henry Ford Academy, which opened in August 1997, is a symbolic return to the educational roots of Henry Ford and the Ford Motor Company. But it would be a mistake to assume that this means a return to the idea of training students for factory jobs or that it means turning out graduates in assembly-line fashion. To the contrary, the Academy's curriculum has high academic standards, and students attending the school think of themselves as college bound.

Academy students, who are selected through random drawing, come from over 14 geographic communities—giving the school a broad, multi-cultural, multi-ethnic flavor. The over 300 ninth through eleventh graders currently enrolled at the school are diverse in their interests, abilities, and attitudes about the future. (The school has added a grade each academic year and will reach a projected full enrollment of 400 students by the year 1999-2000.) The curriculum is designed to expose young men and women alike to a wide range of occupations and professions.

Program Description

The Academy enlisted the support of a curriculum design company to develop the instructional program. Learning Designs Incorporated (LDI), who had previous experience designing employee-training programs for several corporations, designed a curriculum that is project-based and technology-infused.

The Academy's curriculum focuses on mathematics, science, language arts, and social studies to help prepare students for university admission, skilled trade apprenticeships, and/or jobs in the competitive global workplace. The Academy provides "hands-on" learning experiences for both students and teachers in the museum and in business settings. Using technology will link students and teachers with information, mentors, scholars, and peers throughout the world. Involving other community organizations, who bring unique and relevant resources to

Case Study: Michigan

improving and expanding high school learning experiences, helps facilitate the Academy's programs.

The Academy focuses on five developmental areas to prepare students for a variety of post-secondary options. These areas include academic content, technology, communication, thinking and learning, and personal development. Throughout the instructional day, teachers strive to link museum artifacts to daily lessons. At the end of the day, there is a period of reflection—a time to pull together the experiences of the day through journal writing and a discussion of affective issues and to build a sense of community. The academic year is punctuated by several units that integrate academics into a project-based learning experience. There are many opportunities to interact and work with the museum and Ford personnel. Examples include:

- During chemistry class, students studied the production and uses of nuclear power in the museum's Made in America exhibit. Tenth-grade students designed and sewed quilts highlighting cultural integration in America in their U.S. History class, then wrote and edited labels for the quilts in English. Ninth- and tenth-grade students in the Art Club then designed and implemented a formal exhibit of the quilts on display in Henry Ford Museum, working with professionals from the museum staff.

- Throughout their first year, students completed a series of hands-on projects that integrated what they learned in their core subjects (Math, Science, Language Arts, and Social Studies) with the major themes of the manufacturing process (marketing/sales, production, design, purchasing/materials, human resources, and finance.) These projects gave students the opportunity to apply what they learned in the classroom to a real-life project through the manufacturing process. Employees from Ford worked with teachers and students to design and deliver these projects.

- In early April of 1998, a number of Academy students participated in a design project with graduate students from the Massachusetts Institute of Technology (MIT) School of Design. This project took place as part of the Ford/MIT Collaboration, an innovative five-year alliance focusing on education and research. The MIT students were charged with looking at creative ways to use Academy classroom space. Academy students communicated with MIT students through video conferencing and e-mail, offering their input on proposed designs. Collaboration on this project will continue as the Academy designs and builds additional classroom spaces in Greenfield Village

Even though teachers have been frustrated by a lack of time to fully develop lessons that integrate museum resources into the academic curriculum, they recognize that the Academy is a special learning environment with the potential to influence the design of a 21st-century curriculum. Teachers were attracted to the school because of the tremendous resources available, as well as by the vision articulated by the Academy's founders. In describing these resources, the

school's lead teacher distinguished between money and other things of value—people, ideas, the concept of using a manufacturing theme to tie the curriculum together, real world contexts, and the physical resources of the museum itself. The teachers look forward to an upcoming summer institute to give them the opportunity to work together with museum experts and technology and manufacturing specialists to develop and improve the linkage between their teaching and museum resources.

Student Life

The school year begins with a two-week orientation to help build a sense of community among the students and to familiarize them with the unique requirements of student life in a museum environment. The museum became a laboratory, not only for the study of historical artifacts but for the development of citizenship and personal behavior management. Unlike traditional high schools, students at the Academy had to adapt their behavior to the environment and culture of the museum. This meant strict expectations for orderly behavior and showing respect for museum staff and visitors. In return, the students enjoyed the opportunity to interact on a regular basis with adults representing a variety of occupations and professions.

While learning takes place throughout the grounds, the Academy does have designated space to call "home." The classrooms, or "learning studios," were designed to support the Academy's curricular goals. These learning studios are not teacher-owned. Rather, they are subject-owned and occupied by both students and teachers. The students sit at tables sized for four—to accommodate the team-based learning that occurs much of the time. The tables are equipped with electrical ports so students can connect to the museum staff network and the Internet when appropriate. The classroom size is flexible, allowing teachers to "team teach" 50 students or to teach 25 students.

The ninth grade is housed in the northwest corner of the museum, which has been retrofitted with modular glass and aluminum wall systems that allow for flexible space. The glass walls create an environment where the students can see out to the museum, and the museum patrons can see into the classrooms. It is one way of placing public education in the public eye. At first, it is strange for students to attend school in a "fish bowl," but they quickly have become acclimated to the museum visitors who are interested in what's taking place in their classrooms.

The tenth-grade is housed in Greenfield Village, which is adjacent to the museum. The site is one mile from the ninth-grade home base. Tenth-grade students go to school in a veritable historical neighborhood. On their way to class, they pass such buildings as Thomas Edison's Fort Myers Lab, the Wright Brothers' Bicycle Shop, and 58 Bagley Avenue where Henry Ford built his first automobile in 1896. While many of their courses are housed in a newly renovated structure similar in design to the ninth-grade site, students will have access to other buildings. This environment, rich with the history of American innovation and ingenuity, is expected to encourage students to question and explore their world. Eleventh-

and twelfth-grade facilities will be located in the campus area with the tenth-grade facility.

Academy students have the chance to connect with each other in ways they have never experienced before. Several students agreed with the following statement made by a fellow student: "This school differs from my previous school in that you know everyone. There is more emphasis on teamwork and communication. I thought I would miss my friends from my other school; but in just a few months, I had better friends here than I ever had there." Apparently, the vast majority of students find this an attractive learning environment, as the daily attendance rate consistently hovers at 95%.

In addition to developing a structure for organizing the instructional day, the Academy focused on the developmental needs of its students. Focus groups were held with representatives from business and higher education to identify core competencies that were required for students entering the workforce. The key elements identified through this research process became the basis for the Academy's five developmental areas: academics, communications, technology, thinking and learning, and personal development (including work ethic and team building). These five areas are infused in learning projects and help frame how teachers relate to and evaluate students.

When asked to explain the purpose of context-based manufacturing units, students recognized the many facets of the learning experience, from reinforcing academic lessons to learning how to run a business to applying oneself across the five developmental areas. Students recognize and value Academy life, including the written feedback they receive from teachers and the individualized attention they get from Ford employees who act as tutors and mentors.

The Academy began with a set of lofty goals that were very attractive to parents and students but which proved somewhat difficult to achieve. The ideal of providing each student with a laptop computer to use and take home was tempered by the realization that students did not understand how to treat such expensive equipment. The goal of linking the students together through an interactive web page was tempered by technical difficulties with the network server interface. But even though some of the program goals included in the original design of the school have not been realized, parents expressed a high degree of satisfaction with the school. They seem to understand that some start-up problems are inevitable. Parents felt extremely fortunate that their students' names were drawn in a lottery, which is consistently oversubscribed.

Parent satisfaction is tempered, however, by a concern that the school maintain its high academic standards. The lottery system that allowed their child to enroll in the school allowed students with a broad range of academic abilities and interests to enroll as well. As a result, students who qualify for special education intervention can be found in the same classroom as students whose academic abilities far exceed the academic norm that underlies the basic curriculum. School managers and staff have struggled to help all students, irrespective of their pre-

existing academic proficiency, succeed and thrive at the school. Significant remediation is now an important part of the curriculum.

Business Involvement

From the beginning, both the Ford Motor Company and the museum have been completely supportive of the efforts to develop the Academy. According to the Dean of Students, Larry Holiday, the President of Ford visited the school not just to give a speech but to relate to the students as people. With his support and encouragement, the employees of Ford have embraced the school as a project, creating an additional pool of resources ready to be tapped. The museum views the Academy as an innovative demonstration of how a cultural institution can be aligned with public education. Members of the museum's Board of Directors, several of whom also belong to the South Eastern Michigan Cultural Coalition, are so enthusiastic about the Academy's future that they approved the hiring of a Director of Instructional Technology who will help develop a strategy for integrating technology throughout the curriculum.

As students continue through their sophomore, junior, and (now) senior years, business partners continue to play an important role. They offer students the opportunity to move from basic career awareness activities in the freshman year to more-structured job shadowing and internship experiences. The close proximity of the Ford Motor Company's corporate headquarters to the museum allows students the opportunity to not only observe employees in action but to develop on-going relationships with career mentors. The school is working hard to recruit the promised workplace sites and mentors for all students. Current Academy students express career interests in a wide range of areas—from law to engineering, from human resources to finance—all of which can be explored and experienced within Ford's corporate environment.

Looking Ahead

As the Academy moves into its fourth year, it has proven to be tremendously popular. The school has been used as an example of the potential of a regional employer-linked charter school to serve a diverse population effectively and creatively. Cora Christmas, now principal, is an experienced, professional educator who understands school-to-career programs, appreciates the unique demands of the teaching profession and has had experience with young adult learners.

The Academy will also continue to benefit from the guiding hand of Larry Holiday, the Academy's Dean of Students and a former UAW employee responsible for job training for adults. When Mr. Holiday joined the Academy, he returned to his roots as a public school employee. In addition to his talent in developing personal relationships with students, his previous experience with launching innovative programs and his business management experience have been, and will continue to be, an important source of leadership and strength in working through the challenge of managing the vast pool of resources available to the Academy.

Case Study: Michigan

One of the manufacturing unit projects that students were assigned involved selecting a historical artifact from the museum and repositioning it to be successful in today's marketplace. Similarly, Henry Ford Academy's students, parents, teachers, administrators, and business partners are actively engaged in a joint experiment intended to reposition public education to help students be successful in today's new economy.

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Case Study

Flagstaff Arts and Leadership Academy

Museum of Northern Arizona
3100 North Fort Road
Flagstaff AZ 86001
(520) 779-7223
July 1999

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And available on-line at www.nab.com/education.

"I've studied dance all my life and also play the saxophone. My career choice? I'm thinking about going into engineering."

-A FALA Freshman

Overview

The Flagstaff Arts and Leadership Academy (FALA) is located on the campus of the Museum of Northern Arizona in Flagstaff, Arizona. However, it is not the physical setting that creates the school's unique character. Rather, it is the vision of FALA's key leaders that has resulted in this unique illustration of the educational experience that can be created in a charter school that is intimately linked with a business. Although the business in this case is a nonprofit institution, its business-like attributes make it quite relevant to the overall project.

The school, which serves about 140 students, received its charter in January of 1996 and opened its doors the following fall. It draws students from a population base of 50,000 in the Flagstaff area, which includes both urban and rural communities. The shcool will eventually cap its enrollment at 160.

Program Philosophy

FALA was conceived by Karen Butterfield, a former Arizona teacher of the year. After approaching and being rebuffed by the local school district, she approached Michael Fox, the Executive Director of the Museum of Northern Arizona, about the possibility of locating the school on the grounds of the museum. The combination of Ms. Butterfield's vision for a school combining arts opportunities with academic rigor and Mr. Fox's vision of a museum with a broad community mission set the stage for a powerful synergy between the two institutions.

While its focus is on the arts, the institution places a strong emphasis on leadership demonstrated through community involvement. It also maintains rigorous academic standards and challenging academic curriculum. The school uses a portfolio-based assessment of student performance to document progress toward mastery in all areas.

FALA is in its third year of operation. While it has experienced growing pains, its students, faculty, parents, and partner organizations are satisfied customers and strong advocates.

Program Description

According to the school's information packet, "FALA offers a rigorous college prep integrated curriculum with an emphasis on the visual and performing arts. Language Arts and Social Studies are taught as one integrated block. French and Spanish are also offered. In their junior and senior years, students are placed in professional arts internships throughout the community and with the Museum of Northern Arizona. They also have the opportunity to study with professional artists, who serve as 'artists in residency.'" In addition, the school requires community service for graduation. This requirement may or may not be fulfilled with arts-related projects.

The school is attempting to integrate the resources of the museum staff into the curriculum. In addition, the resources of professional arts organizations in the area are utilized extensively by FALA students. In fact, the leaders of the arts organizations are, in some cases, the FALA faculty.

In addition to the integration of resources between the school and external institutions, there is also a substantial push to integrate arts and academics within FALA itself. The academic dean of the school, Troy Hutchings, describes major focal units that serve to integrate the process of education as well as its products. For example, a unit on the Colorado plateau provides opportunities for integration of archeology, geology, anthropology, and the visual arts. Making such an effort successful requires careful and creative planning on the part of teachers, administrators, and external partners. FALA staff plan two such major integrated units for each year, each of which would last for an extended period of time.

While the process of developing full integration is still underway, some illustrations are instructive. Students and school leaders recall how, when a Native American potter came to the museum as an artist-in-residence, he had an opportunity to utilize artifacts from the museum's collection to illustrate to the students the historical antecedents of his own work. During the potter's instruction on traditional techniques for firing clay pottery, the earth sciences teacher dropped in to discuss the chemical and physical changes that the heat of the firing process causes in the material. In this instance, museum resources and staff were effectively connected with both the arts and academics of FALA.

Staff of the museum and FALA are experimenting with joint training. In addition, they conduct an annual joint orientation at which the calendars for the two institutions are shared and coordinated. The museum staff have been open to and excited by the opportunity to learn from the students. Some have used students to test the effectiveness of museum exhibits and lectures.
Academics at FALA are rigorous and advanced. A ninth-grade English class was observed deeply engaged in a discussion of ritual and ideology. What turned out to be a discussion of the novel *Lord of the Flies* encompassed such far-flung concepts as consciousness, leadership, individual responsibility, and the Super Bowl. Many

students contributed to the discussion, and virtually all appeared to be highly energized by it.

One of the requirements for graduation is the presentation and defense of a senior project. While project content varies dramatically, the commonality is that the project must integrate arts and academics.

Work-Based Experience

Students of FALA have several distinct opportunities for work-based experience. These include opportunities within the Museum of Northern Arizona and with several professional arts organizations in the Flagstaff area.

Through the museum studies program, students have the opportunity to learn directly from museum staff what is involved in the management and operation of the museum. The class, which is taught by a member of the museum staff, has relatively low enrollment— approximately 15 students—but a very intensive engagement with museum. In the spring of 1998, the students mounted their first exhibit within the museum. Development of the exhibit was structured in such a way as to expose the students to the various departments of the museum and the steps involved in creating an exhibit. The process began with students interviewing each department head at the museum. Through those interviews, the students came to understand the role played by each manager in the development for support of museum exhibits. The students then decided that the topic of the exhibit would be "Youth Through the Decades" and launched into the research phase. This included survey research targeted toward adults who had been teenagers in the 1950s, 1960s, 1970s, or 1980s. The results provided insight into popular culture of the various decades, including music, fashion, food, activities, movies, and famous people.

The survey research was supplemented with library research that provided background information. There were also forays into music libraries which yielded recordings from which a background tape could be prepared. Photographs, text, graphical material, and artifacts were then mounted as a walk-through exhibit to be enjoyed by museum visitors. The projects succeeded in providing students a broad view of museum management, a hands-on experience with developing an exhibit, and the satisfaction of presenting it to real customers. It was quite clear that at least some of the students in the class had developed tangible, sophisticated skills that would be quite relevant to a career in museum work.

Some FALA students have been employed by the museum, either as student docents or, in one case, as an administrative assistant. The museum leadership has been somewhat pro-active in seeking students for such positions to enhance the linkage between the institutions.

Many work experiences occur outside the museum. Three professional arts organizations in the Flagstaff community, Arizona TheatreWorks, the NAU Preparatory School for the Performing Arts, and the Cinema Arts Center, have taken interns from FALA. These arts institutions operate as businesses and

employers and thus expose the students to real career opportunities. As professional arts organizations, they bring a high degree of rigor and discipline to the internships.

The relationships between these three employers, the school, and the museum are intimate. The Cinema Arts Center and FALA plan to produce a film on Navajo art, also an important focus of the museum. The director of the dance school previously established a dance program at the museum but the program outgrew the facility ten years ago. The emergence of FALA provided her an opportunity to re-establish that relationship. Several staff of the three arts organizations are also on the faculty of FALA.

For some FALA students, the internships represent immersion in a professional career environment. The director of Arizona TheatreWorks (ATW), Wayne C. Watkins, points out that "public schools only teach drama. We teach the craft of acting. We add the professional side of the art, the business side." He stresses that this involves strong commitment and hard work. In order to be clear with students about these requirements, ATW writes contracts with the students. Essentially, these contracts require a "no excuses" approach to the internships. The value of the student contribution to ATW is evidenced by the fact that interns are paid and that some have been hired for productions following their internships. He says that his company gets "labor and passion" from the students, which strengthens the organization.

According to Larry Holloway, director of the Cinema Arts Center, the benefits of the internships are mutual. He requires that students complete the FALA film class prior to enrollment in his internship, which means that all interns come with a base of preparation and experience. As a result, he finds that "the kids apply their academic lessons to the internship, so they expose me to more ideas." He said that, after many years in his profession, working with the students makes him feel young. He also finds opportunities to pay students for their work on certain projects.

The leaders of the professional arts organizations agree that the relationships that have developed are a direct result of the orientation and approach of FALA director Karen Butterfield. They have confidence that the connections will grow stronger with time, so long as she remains at the helm.

Career Direction

Although FALA has a strong focus on the arts and an intimate relationship with the museum, students are not pushed into a particular career direction. Instead, they are provided exposure to a variety of career paths and the academic resources to pursue them.

The artists-in-residence also shape the career development of students. By bringing their real-world experiences into the school, and working with the students hands-on, the artists bring to life what might otherwise be an abstract observation of a particular career path.

Internships both reflect and establish career directions of students. For some, the internships represent immersion in a career of choice in a professional setting. While most students plan to pursue college degrees, some of the internships and classroom/studio work could lead to immediate employability. For example, the dance curriculum, which is taught by Maureen Price, a fully registered teacher for the Royal Academy of Dancing, prepares students to pass the examinations of the RAD. The resulting certification is, essentially, an industry standard for dance teachers.

Students and Student Life

Many students travel long distances to attend FALA. This means rising early in the morning, waiting at bus stops, taking long rides in both directions, and arriving home late in the evening. For many, this amounts to ten hours away from home each day.

Obviously, the FALA approach does not work for all students. Over its two-year history, the school has lost some students to voluntary attrition and some to expulsion. The demands of high standards for academic performance and behavior are simply too challenging for some. Others who have left FALA have done so because the traditional high school environment, including extracurricular activities such as sports, was more attractive.

Many FALA students describe themselves as kids who "would have been outsiders" in a traditional high school. When a group of them was asked whether they missed the traditional pep rallies and football games, they responded that they were the "anti-jocks." FALA students reported feeling a strong sense of community with one another. One boy, who was large for his age, reported that at his previous school he was aggressively recruited to play sports. But he said sports held no interest for him. On the other hand, he had been ridiculed for his interest in drawing. At FALA, not only were his preferences tolerated, they were well understood and strongly supported.

Relationship to Local Education

FALA's application for a charter was originally submitted to the Flagstaff Unified School District (FUSD). However, after the district declined to issue a charter for the school, Ms. Butterfield took her proposal to the Arizona State Board of Education, which approved it.

A new superintendent has come to the FUSD, and his intention is to compete aggressively with all charter schools. The district now plans to offer richer arts opportunities. This posture is what the proponents of charter schools had hoped for, since an explicit goal of the movement has been to stimulate improvements in public schools. According to a member of the FUSD Board, FALA has succeeded in moving the thinking of public school educators "out of the box." For FALA, however, the competition will be a new factor in their recruitment and retention of customers.

Northern Arizona University is involved with FALA, and the new president of that institution intends to do more with the school. In the past, the University's

Center for Excellence in Education administered the Kaufman Test of Educational Achievement. While this has not continued due to cost barriers, the new relationships may focus more on academic linkages.

Business Involvement

Bringing the school onto the campus and inside the walls of the Museum of Northern Arizona has caused a profound "cultural shift" within the museum staff. With more competition for museum resources such as conference rooms and the auditorium, staff must now plan ahead for use of facilities.

On the other hand, museum staff acknowledge that students provide valuable help in carrying out museum operations. They also bring new life and vitality to the atmosphere of the museum. Staff have become frequent attendees of FALA special events such as dance, theater, chorale, and instrumental music performances. The connections between the school and the museum begin with the leadership of both institutions.

Leadership

Michael Fox, the Executive Director of the Museum of Northern Arizona, has an expansive vision for the future of his institution and the role that FALA will play in realizing it. In coming years, he intends for the campus of the museum to become a multi-generational learning community focused on arts, sciences, and cultural affairs. Significant progress has already been made in developing a senior adult mentoring center in which retired scientists and artists will find the opportunity to age in-place while continuing their professional pursuits. Rather than falling into a dismal trajectory toward personal irrelevance, this center will provide an opportunity for these seniors to pursue lifelong learning and teaching. The seniors would interact with regular museum staff and with FALA students as guest lecturers, mentors, and friends.

Mr. Fox's view of the relationship between a business and a charter school is that the linkages must go far beyond giving money or equipment. The key to an effective relationship is the connection of "people resources." But this is much more difficult to accomplish and requires a dramatically different type of commitment.

Karen Butterfield, the founder of the school, provides strong leadership to the school both in terms of its daily operations and its strategic vision. As with many charter school leaders, Ms. Butterfield overcame enormous obstacles to launch the school. The force of her will, along with the good fortune of encountering Mr. Fox, made the existence of the school possible. She has created an environment in which the students feel that they belong, that the staff truly care about them. FALA's connections to the museum and to the professional arts organizations were developed based on her commitment to placing students in career-oriented situations.

The third key leadership component focuses on the excellence of academic program—a perspective maintained by Troy Hutchings, FALA's academic dean. He came to FALA from private prep school in Colorado. At that school, in which nearly two-thirds of the

students had a disability of some kind, virtually all students went on to Ivy League colleges. This exposure to the impact of high academic standards influenced his orientation about what could be accomplished at FALA. By keeping the academic standards at FALA very high, he establishes a trajectory for the school that faculty, students, and parents appear to understand and support.

He believes that the arts can allow for the holistic growth of an individual and help them become critical thinkers. The level of rigor demanded in the academic classes carries over into the arts. He points out that "kids can and do fail arts classes" at FALA, a relatively uncommon phenomenon in traditional public schools.

Together, Mr. Fox, Ms. Butterfield, and Mr. Hutchings form a triumvirate that establishes and advances the vision and strategy for the school.

The FALA Board of Directors provides a point of formal linkage between the school and the museum. The director of education for the museum, Roger Clark, serves as a board member for FALA. This allows him to bring program and planning information from the museum to FALA and vice versa.

Not all the leadership comes from adults. Students are frequently put in positions of responsibility, both in the school and in community placements. Foreign language students at FALA have been teaching French and Spanish to elementary school pupils at a nearby public school. As part of the program, the FALA students put on a foreign language performance of several fairy tales at the museum. They reported being quite conscious of their responsibility to behave as role models for the younger people and were very proud of having done so.

Looking Ahead

FALA administers the same standardized tests that are commonly used in other Arizona public schools. Thus far, the performance of the student body has been among the best in the state. Also, in its first year of operation, many of the graduates were awarded scholarships.

Performance measurement is a topic in which business partners have not yet been engaged. The leadership of the school recently defined performance standards and, along with faculty, communicates them to students and enforces them. Cross-pollenization between FALA and its partners suggests, however, that the partners will play in increasing role in defining performance standards.

At this time, FALA director Butterfield sees several performance measures as critical. One is continual improvement in student achievement, as measured by standardized tests. This is related to her commitment to accreditation of the school as a stimulus to quality improvement. Another measure is continued connection of former students with the arts, although not necessarily in a professional capacity.

While a strong and productive relationship exists between the museum and FALA, the partners see many opportunities for enhanced collaboration. The museum apprenticeship program may expand to create a true pathway toward careers in museum operations and management. Plans are well-underway to improve the facilities in which FALA is currently housed on the museum campus. As the museum proceeds with development of the senior adult mentoring center, the role of FALA students will be integrated. The museum director sees the possibility of FALA students as curators of selected museum collections and developers of exhibits. He even speculates that a gallery of the museum could be given over to the school.

Additional business collaborations are under development, such as internships in writing, radio, and television. The current business partners appear to be strongly committed to maintaining and enhancing the internship relationships and other collaborations. They see FALA as providing important resources—students and facilities—that will contribute to their long-term success.

Moreover, FALA will collaborate with Michael Fox and the Museum of Northern Arizona to institute a mentorship program in conjunction with the opening of a senior citizen center on the museum's campus. Fala students will undoubtedly benefit from this unique opportunity to interact with seniors in an educational setting. Other proposed FALA innovations include a critical thinking seminar, live television broadcasts of the seminar as a pilot program with other schools, and the development and implementation of a museum apprenticeship program to complement the internships and interactive learning opportunities that already exist.

It appears that the per-student funding provided by the state is insufficient to support the FALA program. That being the case, FALA is trying to develop ongoing supplemental funding, possibly including an endowment. Neither the FALA leadership nor that of the museum see expansion of the student body as a solution to the financial challenges. They intend to limit enrollment to 145 students for the long term.

Observations

The leadership, staff, parents, and students of the Flagstaff Arts and Leadership Academy have addressed a broad range of developmental issues since its doors opened in 1996. Several of these are particularly relevant to the specific situations of employer-linked charter schools.

Measuring Success: Business-linked charter schools face unique challenges in measuring and demonstrating their success. FALA provides extensive opportunity for exploration of careers in the arts, but many students expect to pursue other types of careers and keep the arts as avocations. Because the school has very high academic standards, students are well positioned to go to college and succeed in a wide range of fields. Despite its name, the Flagstaff Arts and Leadership Academy does not promise that students will have futures as either artists or leaders. It simply promises to prepare them for "the challenges of post-secondary opportunities." Thus far, FALA has measured its success in terms of

the scores of students on standardized achievement tests and the numbers of graduates who have received college scholarships. Ultimately, other outcome measures may help the school and others like it demonstrate their successes and improve upon them.

Personal Leadership: Charter schools are often launched by strong, committed leaders who can communicate a clear vision to customers, partners, and staff. This is clearly the case at FALA. Continued success of a school sometimes becomes intertwined with a strong personality. For a business-linked charter school, this points out the need to establish formal institutional relationships and a next wave of school leaders who share the vision. These steps may give comfort to the business partners that the connections will survive a change of leadership and that they should.

Competition: As they succeed, business-linked charter schools, like other charter schools, may stimulate competition from traditional public school systems. While the programs of schools like FALA may not be precisely replicable, a public school can offer a combination of enhanced arts education along with all of the other amenities—both social and educational—of traditional public school education. Pep rallies before football games, extensive access to facilities and equipment, and diverse course offerings may well attract some who would have gone to FALA, as long as they are coupled with a good arts program. Whether the public schools can forge the kind of strong, intimate relationships with professional arts organizations that FALA has demonstrated remains to be seen.

Personal Business Involvement: The relationship between FALA and the Museum of Northern Arizona is much more than a marriage of two institutions. The museum director takes a personal, hands-on interest in the school, attending all parent meetings and student performances. As a frequent visitor to the FALA facilities, he is known to the students and the parents as a part of the school, which communicates the value that the museum attaches to the school. For other business-linked charter schools, this suggests the importance of top-level involvement by the leaders of the business.

The need to understand and address issues such as these is of great importance to the success of employer-linked charter schools. FALA is a valuable example of a school and employer-partner that seek synergy at every turn—and often find it. By moving toward true integration of the two institutions in a variety of ways, they prove that charter schools can acquire a great deal more than financial support from employers. They also demonstrate the value that a rigorous educational institution can bring to the employer in return.

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